UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES

BIBLIOGRAPHY OF SCIENTIFIC AND INDUSTRIAL REPORTS

Vol. 7 — November 21, 1947 — No. 8

CONTENTS

CHEMICALS AND ALLIED PRODUCTS....659 - 693, 730 - 741
DRUGS AND PHARMACEUTICALS....659 - 667
DYES....667 - 675
INORGANIC CHEMICALS....675 - 676
CHEMICAL ENGINEERING AND EQUIPMENT....676 - 677
MISCELLANEOUS CHEMICALS....677 - 693

METALS AND METAL PRODUCTS....693 - 708

MINERALS AND MINERAL PRODUCTS....708 - 709

ORDNANCE AND ACCESSORIES....709 - 710

PHOTOGRAPHIC AND OPTICAL GOODS (INCLUDING PHOTOGRAPHIC PROCESSING)....710 - 718

TEXTILES AND TEXTILE PRODUCTS....718 - 722

MISCELLANEOUS....722 - 730, 741 - 748

PATENTS....730 - 748
CHEMICALS AND ALLIED PRODUCTS....730 - 741
MISCELLANEOUS....741 - 748

REGISTER OF PATENTS AVAILABLE FOR LICENSING OR SALE....749 - 752

UNIVERSITY OF MICHIGAN LIBRARIES

* Indicates that reports in the BIOS, CIOS and FIAT series are deposited in the Library of Congress Depository Libraries. For a complete list of these libraries, see page 1, volume 5, of this Bibliography.

In addition to the indexes described on the back cover of this Bibliography, the Office of Technical Services has published the following reference works:

PB L 58101. SWIFT, GRACE. Government document series, analyzed by Office of Technical Services. Jan 1947. 46 p. Price: 25¢

PB L 78000. LOWRY, W. KENNETH. OSRD reports: Bibliography and index of declassified reports having OSRD numbers. Jun 1947. 105 p. Price: 75¢

PB L 79322. SWIFT, GRACE and ORNE, JERROLD. Subject headings for technical libraries. Jun 1947. 167 p. Price: $1.50

PB L 81803. U. S. OFFICE OF TECHNICAL SERVICES, TECHNICAL INDUSTRIAL INTELLIGENCE DIVISION. Reports resulting from the investigation of German technology, 1945-1946, and index of personnel. May 1947. 207 p. Price: $5.25

ERRATA:

v. 7, p. 291. PB L 78096 includes Frames 138 through 142 of FIAT Reel C 185.

v. 7, p. 291. PB L 78099 contains 7 pages and includes Frames 146 through 152 of FIAT Reel C 185.

The following reports taken from FIAT Reel C 185 (PB L 25625) should be quoted at an Enlargement Print price of $1.50 each instead of a Photostat price of $1.00 each:

v. 7, p. 295. PB L 78174.

v. 7, p. 301. PB L 77908.

v. 7, p. 302. PB L 77922.

v. 7, p. 304. PB L 77850; PB L 77851.

v. 7, p. 305. PB L 77969.

v. 7, p. 306. PB L 85323; PB L 77981.

v. 7, p. 307. PB L 57517; PB L 57518; PB L 57569.

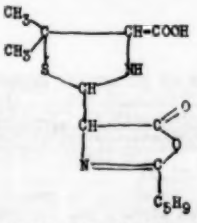
v. 7, p. 309. PB L 78025.

Drugs and Pharmaceuticals

* PB L 79235. BROBEN, J. A. and others. Preparation of biological products at selected targets in Germany. (BIOS Final Rept 1320, Item 24). Sep-Oct 1946. 177 p. Price: Microfilm-$4.00 - Photostat-$12.00
A number of biological laboratories in Germany were investigated regarding their procedures. In general, only those laboratories were visited where the biological products were prepared on a large scale or being made ready for distribution by ampouling or tabletting. Prof. Kuhn of the Kaiser Wilhelm Institute, Heidelberg was visited in relation to dibrom salicil compounds. Prof. H. Brockman at Göttingen and certain other research workers were also interviewed. In most cases, the main targets have been previously investigated very thoroughly and reference is made, in this work, to the earlier reports. Two apparently uninvestigated organizations were also visited, the Nordwestdeutschland. Serum Institut at Itzehoe near Hamburg, and the "Chemische Fabrik" of August Wolff at Bielefeld. Part A of the report deals with the production of sera and vaccines; part B deals with insulin and hormone extracts; and part C deals with ampouling, tabletting and plant items. Part D includes penicillin production at Elberfeld and an interview of Prof. Buchner (pathologist) of the University of Freiburg. Ten appendices consist of documents in English or German which relate to procedures. A few photographs are included. The investigators have concluded that the work on sera and vaccine production is not of a high order. The production of insulin is seriously hampered by lack of raw material and inadequate means of transport of what pancreas is available. Standardization procedures are generally weak and there is no central bureau for check testing. Production of other hormone extracts from natural sources has ceased at several institutions because of lack of raw material. Methods of ampouling and tabletting have been fully described in several previous reports. No new features were apparent.

PB L 80056. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Summary of structure studies on penicillin. (Merck & Co Inc Rept M 1). Nov 1943. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00
The nomenclature for penicillins is presented followed by the preparation of the degradation products with empirical formulas and structural studies. Merck & Co.

PB L 80057. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Structure studies on penicillin F. Part II. (Merck & Co. Inc Rept (M 2). n. d. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Taking into account the structural data in Part I of this summary report on penicillin G (PB 80056) it appears very probable that the formula of penicillin F was $C_{14}H_{20}N_2O_4S$. and that it has the following structure:



In other words the phenylacetic acid group on the azlactone ring of penicillin G is replaced by an aliphatic acid of the composition C_5H_9COOH. Merck & Co.

PB L 80058. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical characteristics of penicillin and its degradation products. (Merck & Co Inc Rept M 3). Dec 1943. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
Physical and chemical characteristics are listed. Structural formulae designated by Roman numerals appear in Merck Rept M-1; PB 80056. Merck & Co.

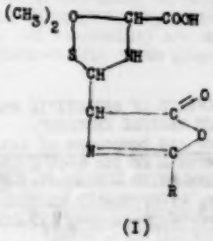
PB L 80059. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Structure studies on penicillin G. Informal monthly progress report. Nov, 1943. (Merck & Co. Inc Rept M 6). Dec 1943. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Structures I and II for penicillin G still stand as reported in Merck Rept M-1; PB 80056. Cleavage and oxidation studies are reported. Penicillin G, methyl ester, di-sodium penicilloate G, benzylamine salt of monomethyl penicilloate G and penicillin G (free acid) were made. Further experiments on penilloic acid G are in progress. Three synthetic azlactones were made. Merck Repts. 4 and 5 not circulated. Merck & Co.

PB L 80060. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the structure of penicillin G. Informal monthly progress report, Dec 1943. (Merck & Co Inc Rept M 7). Dec 1943. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The physical chemical properties of a number of compounds were measured and the results interpreted in terms of the proposed azlactone structure of penicillin G. Merck & Co.

PB L 80061. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Structure studies on penicillin G. Informal monthly progress report, Jan 1944. (Merck & Co Inc Rept M 8). Jan 1944. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The oxidation of penicillin G by Tollen's Reagent has been continued and the structure of the oxidation product considered, also the structure of the methyl ester of penicillin G penilloic acid G, and penicilloic acid G. Merck & Co.

PB L 80062. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the structure of penicillin G. Informal monthly progress report, Jan 1944. (Merck & Co Inc Rept M 9). Jan 1944. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
The following penicillin G investigations are reported: physical-chemical data of the diazoesters, ultra-violet absorption data, effect of alcohol and mercuric salts. Merck & Co.

PB L 80063. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic studies on penicillin G and F. Summary report. (Merck & Co Inc Rept M 10). Jan 1944. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report on synthetic studies is a summary of work up to January 31, 1944 and is based upon structure I for penicillin G and F.



(I)

UNIVERSITY OF MICHIGAN LIBRARIES

R = $C_6H_5CH_2$ - Penicillin G.

R = $CH_3CH_2CH = CH - CH_2$ - Penicillin F.

PB L 80064. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of β,β-diethoxy-α-phenylacetamidopropionitrile. (Merck & Co Inc Rept M 10a). n. d. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
The preparation, yield and analytical results are given.

PB L 80326. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Data from British reports prior to July 30, 1943. (Merck & Co Inc Rept M 11). n. d. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Data on (1) penillic acid (a) acid inactivation, (b) reaction with mercuric chloride to give penillamine hydrochloride; (2) formation of a C6 aldehyde from crystalline penicillinic acid, and (3) relation between penicillinic and penillic acids. Merck & Co.

PB L 80065. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic studies on penicillin G and related compounds. Informal monthly progress report, Feb 29, 1944. (Merck & Co Inc Rept 12a). Feb 1944. 18 p. Price: Microfilm-$1.00-Photostat-$2.00
Studies on resynthesis of penicillin G from penicilloic acid G, study of penicilloic acid G in acetic anhydride, penicillamine and derivatives, preparation of crystalline penilloic acid, and ethyl penaldate G, condensation of ethyl penaldate G with cysteine, preparation of penicilloic acid G ethyl ester, preparation and reactions of β-ethoxy-α-phenylacetaminoacrylyl bromide, preparation of model azlactones, and condensation reactions. Merck & Co.

PB L 80066. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Structure studies on penicillin G. Informal monthly progress report, Feb 29, 1944. (Merck & Co Inc Rept M 12b). Feb 1944. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report contains the following: oxidation of penicillin G by Tollens Reagent, crystallization of penicillin G methyl ester and its reaction with benzylamine, and its saponification, esters of penicilloic acid G, structure of penillic acid G and penicilloic acid G derivatives. Merck & Co.

PB L 80067. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report, Feb 1944. (Merck & Co Inc Rept M 12c) Feb 1944. 24 p. Price: Microfilm-$1.00 - Photostat-$2.00
The physical-chemical investigations of the following are reported: (A) the oxazoles and azlactones; (B) of miscellaneous compounds as acrylic acid, propionic acid, thiazoline, thiazolidine and thiazole derivatives; (C) Penicillin G and its derivatives. Merck & Co.

PB L 80068. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic studies on penicillamine and compounds of interest to penicillin G and F. (Merck & Co Inc Rept M 12d). Feb 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report is a summary of synthetic studies on penicillamine and the preparation of α-amino-β,β-diethoxypropionic acid. Merck & Co.

PB L 80069. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Structure studies on penicillin G: Degration of monobenzylamide of penicilloic acid G. (Merck & Co Inc Rept M 13). Mar 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The preparation of G penicilloic amide-α-benzylamide and its reaction with mercuric chloride, the reduction of penaldic acid G monobenzylamide, and the preparation of N-phenylacetylserine and its derivatives. Merck & Co.

PB L 80070. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthesis of 2-benzyl-4-formyl-5(4)-oxazolone. (Merck & Co Inc Rept M 14). Mar 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The synthesis is accomplished in three steps: β,β-dimethoxy-α-phenacetamidopropionate-Methyl ester, to-2-benzyl-4-carbomethylene-5(4)-oxazolone, to -2-benzyl-4-formyl-5(4)-oxazolone. Merck & Co.

PB L 80071. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report for Mar 1944. (Merck & Co Inc Rept M 15a). Mar 1944. 18 p. Price: Microfilm-$1.00 - Photostat-$2.00
The properties of approximately twelve samples of synthetic d-penilloic acid were examined. For the most part they were characterized by a rather wide variation of their physical properties, i. e., crystalline form, milking point, solubility, and optical rotation. Chemically, however, they were characterized by much less variation in properties, i. e., titrational behavior, ultra-violet absorption, and reaction with mercuric chloride. Merck & Co.

PB L 80072. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Mar 1944. (Merck & Co Inc Rept M 15b). Mar 1944. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The preparation, reactions, and structure of certain penicillin G derivatives. Merck & Co.

PB L 80073. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Mar 1944. (Merck & Co Inc Rept M 15c). Mar 1944. 24 p. Price: Microfilm-$1.00 - Photostat-$2.00
A study of the preparation, structure, and reactions of derivatives of : 4-thiazolidinecarboxylic, penilloic acid F and G, and isovaleric acid. Merck & Co.

PB L 80074. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Preparation of d-2-(α-toluylaminocarboethoxymethyl)-5,5-dimethylthiazolidine-4-carboxylic acid. (Synthetic monoethyl penicilloate G). (Merck & Co Inc Rept M 16). Apr 1944. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
Experimental data are given. Reference is made to informal monthly progress reports from Merck & Co. for Feb. 29, 1944 (PB 80065) and Mar. 31, 1944 (PB 80072, 80073). Merck & Co.

PB L 80075. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthesis of the diethylacetal of penaldic acid G from ethyl chloroacetate.

(Merck & Co Inc Rept M 17). Apr 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Experimental data is given. Reference is made to Merck Rept X; PB 80063. Merck & Co.

PB L 80076. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Reaction between phenaceturic acid, ethyl orthoformate and acetic anhydride. (Merck & Co Inc Rept M 18). Apr 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
The experimental data are given. However, the structure of the product is still under investigation. Merck & Co.

PB L 80077. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthesis of 4-formyl-2-phenyl-5(4)-oxazolone. (Merck & Co Inc Rept M 19). Apr 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
The experimental data are given in five steps for the preparation of 4-formyl-2-phenyl-5(4)-oxazolone. Merck & Co.

PB L 80078. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthesis of 4-ethoxymethylene-2-phenyl-5(4)-oxazolone and 4-methoxymethylene-2-phenyl-5(4)-oxazolone from triethyl orthoformate or trimethyl orthoformate and hippuric acid. (Merck & Co Inc Rept M 20). Apr 1944. 2 p. Price: Microfilm-$1.00-Photostat-$1.00
Experimental data are given. Merck & Co.

PB L 80079. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. A colorimetric method for the determination of penicillin. Preliminary report. By John V. Scudi. (Merck & Co Inc Rept M 21). n. d. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The test was standardized using an azo dye, N-(1-naphthyl-4-azobenzene)-ethylene diamine. Details of the method are set forth in the experimental part. Merck & Co.

PB L 80080. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Outline of the Scudi colorimetric method for the determination of penicillin (revised). (Merck & Co Inc Rept M 21a). Jul 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is a revised report to Merck Rept 21; PB 80079 covering the preparation of the dye solution and of penicillin solutions, test procedure, calibration and interfering substances. Merck & Co.

PB L 80081 - PB 80083. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Three-hour colorimetric method for determination of penicillin. Supplementary reports I - III. By John V. Scudi. (Merck & Co. Inc Repts M 21b-M-21d). n. d. PB 80081 (Rept M 21b), 14 p. PB 80082 (Rept M 21c), 10 p. PB 80083 (Rept M 21d), 7 p. Price of each: Microfilm-$1.00 - Photostat-$1.00.
The colorimetric method for the determination of penicillin has been modified, it is simpler, and yields more precise results than the method originally described. Tables and graphs appear in the reports. Merck & Co.

PB L 80084. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies in structure. Informal monthly progress report, Apr 1944. (Merck & Co Inc Rept M 22). Apr 1944. 13 p. Price: Microfilm-$1.00 - Photostat-$1.00
Certain brief comments concerning the evidence for certain structures for penicillin G and its degradation products. Merck & Co.

PB L 80085. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Apr 1944. (Merck & Co Inc Rept M 23). Apr 1944. 33 p. Price: Microfilm-$1.00 - Photostat-$3.00
Studies on: (A) penilloic acid G, (B) penicilloic acid G and derivatives and related compounds, (C) reaction of penaldic acid derivatives including the oxazolones with amines, (D) synthesis of penillamine and related compounds, (E) synthesis of penillic acid G and related compounds, (F) condensation reactions, (G) thiazolines and related compounds, (h) α-benzamido and α-toluylamidomalonic esters and related oxazolones and derivatives, and (I) experiments concerned with the four-numbered lactam formula for penicillin. Merck & Co.

PB L 80086. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Isolation of penicillin G. Informal monthly progress report, Apr 1944. (Merck & Co Inc Rept M 24). Apr 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The study of a preparation different from penicillin G (preparation #111) with some physical - chemical observations. Merck & Co.

PB L 80087. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report, Apr 1944. (Merck & Co Inc Rept M 25). Apr 1944. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00
The study of the physical-chemical properties of: (A) some typical thiazolines, (B) reaction products of certain azlactones, and (C) penicillin G and its derivatives. Merck & Co.

PB L 80088. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Synthetic studies on penicillamine and compounds of interest to penicillin G and F. Informal monthly progress report, Apr 1944. (Merck & Co Inc Rept M 26). Apr 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
A new synthesis outlines as follows: the azlactone, 2-methyl-4-isopropylidene oxazolone is a key intermediate and may be prepared (a) from dl-valine or (B) from α-amino-β-methoxy-isovaleric acid. Hydrogen sulfide readily adds to the azlactone (Compound I). Hydrolysis with warm water afforded as 70-80% yield of N-acetyl penicillamine (Compound II). This was hydrolyzed in high yield to dl-penicillamine hydrochloride (Compound III). The resolution of dl-acetylpenicillamine has not been accomplished successfully as yet. In most cases crystalline alkaloid salts (brucine, thebaine, ephedrine, quinidine, quinine, and cinchonine) are obtained and the separation of the desired salt is in progress.

PB L 80089. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Supplement to Informal progress report, Apr 1944. (Merck & Co Inc Rept M 27). May 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
A supplement to Merck Rept M-22; PB 80084. Under the headings of "Discussion" and "Hydrogenolysis of ethyl penicilloate G"

UNIVERSITY OF MICHIGAN LIBRARIES

certain incomplete data were added during the final preparation of that report which are now presented in final form. Merck & Co.

PB L 80090. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, May 31, 1944. (Merck & Co Inc Rept M 28). May 1944. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The data accumulated and contained in this report and in Merck Repts M-15b and M-22 (PB 80072 and PB 80084) indicate that there are two diastereoisomers of synthetic penilloic acid G and four possible disastereoisomers of the N-benzoyl derivatives of the monomethyl and monthyl d-penicilloates G. A nonenclature system for these esters is given. Merck & Co.

PB L 80091. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, May 31, 1944. (Merck & Co Inc Rept M 29). May 1944. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00
The report is divided into the following studies: (A) penilloic acid G, (B) penicilloic acid G and derivatives, (C) oxazolones, (D) synthesis of penillic acid G, (E) condensation reactions, and (F) α-benzamido- and α-toluylamido-malonic esters. Merck & Co.

PB L 80092. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report for May 1944. (Merck & Co Inc Rept M 30). May 1944. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00
The following studies on penicillin G derivatives are reported: ultra-violet absorption, saponification, potentiometric titration, acetylation, reaction with β-amino-mercaptans, and degradation products of penicillin G. Merck & Co.

PB L 80093. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Saponification of methyl ester of penicillin G to give an active sodium salt. Informal monthly progress report. June 8, 1944. (Merck & Co Inc Rept M 31). Jun 1944. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
The method is given. Reference is made to Merck Rept M-12b, 2; PB 80066.

PB L 80094. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Jun 30, 1944. (Merck & Co Inc Rept M 32). Jun 1944. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
To determine whether methyl penicillin G could be converted into a monomethyl ester of penillic acid G, a study of the reactions of the ester under appropriate conditions was started. Two products have been obtained, the one was phenaceturic acid, and the other was a neutral product melting at 150-151°. Analytical data indicate it is isomeric with methyl penicillin G, but its neutral character does not allow a monomethyl ester of penillic acid G. This product appears to have interest for the structure problem. Merck & Co.

PB L 80095. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Jun 30, 1944. (Merck & Co Inc Rept M 33). Jun 1944. 22 p. Price: Microfilm-$1.00 - Photostat-$2.00
Studies on: (A) penilloic acid G, (B) penicilloic acid G and derivatives, (C) oxazolones, (D) condensation reactions and azlactonizations, and (E) synthesis of penillic acid G and related compounds. Merck & Co.

PB L 80096. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report for Jun 1944. (Merck & Co Inc Rept M 34). Jun 1944. 15 p. Price: Microfilm-$1.00 - Photostat-$1.00
A study of: (A) ultra-violet absorption of imidazole derivatives, (B) potentiometric titration and saponification of miscellaneous compounds, (C) mutarotation of α-methyl penicilloate in methanol, (D) acetylation of 2-n-propyl-thiazolidine-4-carboxylate, (E) ethanolysis of sodium penicillin G, (F) conversion of penicillin G to penillic acid G, (G) inactivation of sodium penicillin G, and supplements No. I and No. III - molecular weight determination and reaction of penicillin acid G with mercuric chloride and mercuric cyanide. Merck & Co.

PB L 80097. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Informal monthly progress report, June 1944. (Merck & Co Inc Rept M 35). Jul 1944. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report contains experimental details for the preparatin of compounds which were only mentioned in earlier reports. Merck & Co.

PB L 80098. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report. Jul 31, 1944. (Merck & Co. Inc. Rept M 36) Jul 1944. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
A study of various reactions of methyl penicillin G and penillic acid G. Merck & Co.

PB L 80099. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Jul 31, 1944. (Merck & Co Inc Rept M 37). Jul 1944. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00
The following is reported: (A) experiments on the synthesis of penillic acid G and compounds of related structure, (B) penaldic acid derivatives and related compounds, and (C) condensation and azlactonization reactions.

PB L 80100. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the synthesis and structure of penicillin G. Informal monthly progress report for Jul 1944. (Merck & Co Inc Rept M 38). Jul 1944. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
A study of the reactions of derivatives of penaldic, penicilloic, norpenicilloic, and penillic acid G, with further observations on the inactivation of sodium penicillin G, and the biological activity of the new crystalline penicillin with table attached. Merck & Co.

PB L 80101. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Aug 31, 1944. (Merck & Co Inc Rept L 39). Aug 1944. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The studies on a rearrangement product of methyl penicillin G have been continued and method of preparation improved. The stability of this new substance under the well-known degradation conditions for penicillin G has been its most outstanding characteristic. Hydrolysis of this compound in sodium hydroxide solution yielded phenylacetic acid, and treatment in methanol and hydrochloric acid yielded methyl phenaceturate. A suitable designation for this new arrangement product (free acid) appears to be penillonic acid. Merck & Co.

PB L 80102. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Aug 31, 1944. (Merck & Co Inc Rept M 40). Aug 1944. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00
Studies on synthesis: (A) oxazolones and compounds of related interest, (B) certain compounds related to possible structures of penicillin G, penillic acid G, etc., (C) penicilloic acid G derivatives, and (D) condensation and azlactonization reactions. Merck & Co.

PB L 80103. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the structure and synthesis of penicillin G. Informal monthly progress report for Aug 1944. (Merck & Co Inc Rept M 41). Aug 1944. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00
Further investigations into the chemistry of penicillin G, especially the methyl ester, have been carried out. Attempts to find conditions under which monomethyl penillate G might be formed in significant amounts were unsuccessful. A preliminary study was made of the saponification behavior of methyl penicillin G in alcohol - water solutions. A preliminary study of the phenylacetic acid inactivation of methyl penicillin G has been carried out. Some data is presented on the thermal stability of pure crystalline sodium penicillin G. Further work concerning the nature of the degradation of penillic acid G in methanol is described. The compound 2-benzyl-imidazol-4-carboxylic-1-acetic acid was synthesized, using methods described in British Rept-38, and properties are discussed. A study of sulfur lability under sodium plumbite influence has been undertaken. The investigation of reaction of mercuric salts with penicillin G and its degradation products have been continued. Merck & Co.

PB L 80104. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Informal monthly progress report. Aug 29, 1944. (Merck & Co Inc Rept M 42). Aug 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
A solution of 5% hydrogen fluoride in anhydrous dioxane has been found to be an efficient medium for the condensation of carbonyl groups with penicillamine. Merck & Co.

PB L 80105. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Sep 30, 1944. (Merck & Co Inc Rept M 43).. Sep 1944. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00
Proof of the structure of several penicillin derivatives is offered in the discussion while in the analytical section of the report appear various reactions of penillonic acid G, penicilloic acid G, and methyl penicillin G. Azlactonization experiments are summarized in the attached table. Merck & Co.

PB L 80106. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Sep 30, 1944. (Merck & Co Inc Rept M 44). Sep 1944. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00
The following data are reported: (A) the thiazolidine derivative resulting from the condensation of d-penicillamine hydrochloride and hydroxymethylenecamphor, (B) oxazolones and azlactones, (C) structure and synthesis of penillic acid G, (D) penicilloic acid G derivatives, and (E) condensation and azlactonization reactions. Merck & Co.

PB L 80107. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the structure and synthesis of penicillin G. Informal monthly progress report for Sep 1944. (Merck & Co Inc Rept M 45). Sep 1944. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00
Further experiments concerning the nature of the degradation of penillic acid G under the influence of methanol and of methanolic mercuric chloride are described. Evidence is presented that the crude degradation products thus far obtained are mixtures of closely related substances possibly even isomers. An attempt to synthesize isopenillic acid G is described. Investigation of the hydrolysis of sodium penicillin G was carried out also the isolation and identification of crytalline penilloic acid G. Some physical-chemical measurements are briefly described. Merck & Co.

PB L 80108. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Oct 31, 1944. (Merck & Co Inc Rept M 46). Oct 1944. 25 p. Price: Microfilm-$1.00 - Photostat-$2.00
The following data is reported: (1) comparison of the ultraviolet absorption of natural and synthetic methyl penicillenate G, (2) identification of the benzylamides from natural and synthetic methyl penicillenate G, (3) degradation of methyl penicillin G to the crystalline sodium salt of 2-benzyl-4-hydroxymethylene-5(4)-oxazolone, (4) successive degradation of methyl penicillin G to methyl penicillenate G, methyl desthiopenicillenate G, and to the sodium salt of 2-benzyl-4-hydroxymethylene-5(4)-oxazolone, (5) action of diazomethane on pure methyl penicillin G, (6) cleavage of methyl dl-desthiopenicillenate G with p-toluenesulfonic acid, (7) oxidation of sodium penicillin G by Tollen's reagent, and the preparation of various penicillin derivatives. Structural formulae are given. Merck & Co.

PB L 80109. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Oct 31, 1944. (Merck & Co Inc Rept 47). Oct 1944. 37 p. Price: Microfilm-$1.00 - Photostat-$3.00
Studies on the following are reported: (A) methyl penillonate G, methyl penicillenate G, and methyl dihydropenicillenate F, (B) penaldic acid derivatives, oxazolones, and thiazolones, (C) α-toluamidomalonic acid derivatives, (D) penicilloic acid derivatives - data on isomeric derivatives are tabulated, (E) penillic acid and imidazoles, and (F) azlactonization and condensation.

PB L 80110. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Physical-chemical measurements in connection with the structure and synthesis of penicillin G. Informal monthly progress report for Oct 1944. (Merck & Co Inc Rept M 48). Oct 1944. 15 p. Price: Microfilm-$1.00 - Photostat-$1.00

UNIVERSITY OF MICHIGAN LIBRARIES

The alkaline degradation of penillic acid G was studied. The physical-chemical properties of the thiazolidine derivative resulting from the condensation of d-penicillamine and hydroxymethylenecamphor have been determined and found to be those of a "normal" thiazolidine. The properties of 2-benzyl-4-hydroxymethylene-5-imidazolone and of 2-benzyl-4-hydroxymethylene-5-thiazolone are described. The physical-chemical behavior and properties of the degration product of sodium penicillin G obtained by desulfurization in aqueous solution using Raney nickel catalyst are described, also some interesting polarographic observations on the methanolytic and mercuric chloride-alcohol degradation products of penillic acid G are described. Merck & Co.

PB L 80111. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Nov 30, 1944. (Merck & Co Inc Rept M 49). Nov 1944. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00

This report concerns, first, the acid, $C_{16}H_{20}N_2O_4S$ obtained from sodium penicillin G by hydrogenolysis, which appears to have structure I and which renews the interest in the β-lactam structure, II, for penicillin G, and second, the conversion of methyl penicillin G to dimethyl penillate G, $C_{16}H_{22}N_2O_4$, which has been identified as N-(N-phenylacetyl alanyl)-d-valine, III. Merck & Co.

PB L 80112. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Nov 30, 1944. (Merck & Co Inc Rept M 50). Nov 1944. 34 p. Price: Microfilm-$1.00 - Photostat-$3.00

The study is divided into the following sections: (A) penillic acid G, isopenillic acid G, imidazoles, etc., (B) methyl penilloate G, methyl penicillenate, (C) penaldic acid and oxazolones, (D) valine derivatives, (E) penicilloic acid derivatives, (F) thiazolines, and (G) azlactonization, condensations and related experiments concerned with the final steps in the synthesis of penicillin G. Merck & Co.

PB L 80113. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical-chemical measurements. Informal monthly progress report, Nov 30, 1944. (Merck & Co Inc Rept M 51). Nov 1944. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

Additional physical-chemical properties of the new crystalline hydrogenolysis products of sodium penicillin G are presented. The first of these compounds, $C_{16}H_{20}N_2O_4$, has been found to undergo acidic and basic hydrolyses to give a common dibasic acid. Some of the physical-chemical properties of these hydrolytic products are also given. These are compared with those of an authentic sample of d-(α)-desthiopenicilloic acid G. Some of the physical properties of synthetic dimethyl penillate G and dimethyl isopenillate G are described and compared with those of the natural products. Methyl pseudopenicillin G was prepared and absorption measurements were made. Merck & Co.

PB L 80114. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Dec 30, 1944. (Merck & Co Inc Rept M 52). Dec 1944. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report is concerned with further work on the acid $C_{16}H_{20}N_2O_4$; see Merck Rept M-49; PB 80111. Merck & Co.

PB L 80115. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Dec 30, 1944. (Merck & Co Inc Rept M 53). Dec 1944. 30 p. Price: Microfilm-$1.00 - Photostat-$2.00

This report is concerned with: (A) the synthesis and reactions of penillic acid G and its derivatives and intermediates, (B) the preparation and reactions of α-acylamido-β-arylamidopropionic acid and derivatives, (C) penicilloic acid derivatives, (D) penicillamine and d-valine derivatives, (E) final steps in the synthesis of penicillin, and (F) imidazolines. Merck & Co.

PB L 80116. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Jan 31, 1945. (Merck & Co Inc Rept M 54). Jan 1945. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

A further study of the acid $C_{16}H_{20}N_2O_4$; see Merck Rept M-49; PB 80111 and Rept M-52; PB 80114. Merck & Co.

PB L 80117. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Jan 1945. (Merck & Co Inc Rept M 55). Jan 1945. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00

Report on: (A) preparation and reactions of β-lactam models, (B) penaldic acid G derivatives, (C) reactions of penillic acid G and its derivatives and intermediates, (D) studies on d-penicillamine derivatives, (E) studies on penicilloic acid derivatives, and (F) experiments concerned with final steps in projected synthesis of penicillin. Merck & Co.

PB L 80118. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of Penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Feb 28, 1945. (Merck & Co Inc Rept M 56). Feb 1945. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00

Methyl penicillin G has been oxidized to a crystalline compound which is tentatively formulated as the sulfone. Treatment of the acid $C_{16}H_{20}N_2O_4$ gave d-α-desthiopenicilloic acid G hydrochloride. As a basis for the discussion of certain new data in this report a review of the stereochemistry of the desthiopenicilloic acids is justified. The data on the isomers are summarized in Table I. This report describes details of the treatment of the β-lactam with various amounts of hydrogen chloride in dioxane solution of room temperature. Merck & Co.

PB L 80119. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Feb 28, 1945. (Merck & Co Inc Rept M 57). Feb 1945. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

The following data are reported: (A) experiments on the preparation and reactions of β-lactam models, (B) experiments concerned with the tricyclic formula for penicillin G, (C) Penillonic acid G, and (D) studies on phthalimide derivatives. Merck & Co.

PB L 80120. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the

structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, Feb 28, 1945. (Merck & Co Inc Rept M 58). Feb 1945. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

Dimethyl isopenillate G is formed when dimethyl penillate G is dissolved in glacial acetic acid and allowed to stand at 23°. The β-lactan of α-methyl-β-phenyl-N-benzylpropionic acid has been prepared. The infra-red absorption spectra of some amides and structurally related compounds are described and tabulated, also of methyl dihydro penicillenate F and dimethyl isopenillate G. A fluorometric method for the determination of penicillin is considered. Merck & Co.

PB L 80121. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Mar 31, 1945. (Merck & Co Inc Rept M 59). Mar 1945. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00

A description and structural study is given for: (a) the preparation, reactions and biological activity of methyl penicillin G sulfone, and (b) the reaction of the β-lactam of α-desthiopenicilloic acid G. Merck & Co.

PB L 80122. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Mar 31, 1945. (Merck & Co Inc Rept M 60). Mar 1945. 21 p. Price: Microfilm-$1.00 - Photostat-$2.00

The report covers the following studies: (A) preparation and reactions of β-lactam models, (B) structure of the compound obtained by action of benzylamine on 2-benzyl-4-ethoxymethylene-5(4)-oxazolone hydrobromide, (C) syntheses relating to oxasoles and oxazolines, (D) preparation and reactions of various penaldic acid derivatives, (E) penicilloic acid derivatives, and (F) microbiological tests of synthetic compounds for influencing penicillin production. Merck & Co.

PB L 80123. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. III. Physical chemical section. Informal monthly progress report, Mar 31, 1945. (Merck & Co Inc Rept M 61). Mar 1945. 15 p. Price: Microfilm-$1.00 - Photostat-$2.00

The crystalline sulfone of methyl penicillin G has been examined from the physical chemical standpoint and found to possess properties that are in accord with the implications of the above name. The infra-red absorption spectra of methyl penicillin G and its sulfone, and of a large number of compounds of general interest, and of five derivatives of penaldic acid G have been measured. Merck & Co.

PB L 80124. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Apr 30, 1945. (Merck & Co Inc Rept M 62). Apr 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

The hydrogenolysis of sodium penicillin G yielded an acid which was identical with a synthetic specimen of one of the two isomers of N-(N-phenylacetylalanyl)-d(-) valine. The synthetic acid was prepared by the reaction between d(-) valine and 2-benzyl-4-methyl-5(4)-oxazolone. The two diastereoisomers were isolated in pure form. The formation of methyl penicillenate G and the hexahydro derivative of methyl penicillin G sulfone have been prepared. Merck & Co.

PB L 80125. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Apr 30, 1945. (Merck & Co Inc Rept M 63). Apr 1945. 25 p. Price: Microfilm-$1.00 - Photostat-$2.00

The following studies are reported: (A) preparation and reactions of α-N-substituted penicilloates, (B) the preparation and reactions of β-lactam models, (C) the preparation and reactions of thiazolidines, (D) the preparation and reactions of thiazolines, (E) syntheses relating to oxazoles, and (F) on penicilloic acid derivatives. Merck & Co.

PB L 80126. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, Apr 30, 1945. (Merck & Co Inc Rept M 64). Apr 1945. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00

The hydrogenation of methyl penicillin sulfone G has been accomplished. Quantitative determinations of the infra-red spectra of N-methyl phenylacetamide, its hexahydro derivative, methyl penicillin sulfone G and its hexahydro derivative show no significant change in the region under consideration after hydrogenation of these phenylacetamido derivatives. A modified method for the preparation of methyl penicillin sulfone G is described. A program of systematic quantitative hydrolytic studies of some model β-lactams has been initiated. Infra-red absorption measurements have been made of the following: a group of new compounds, of four β-lactams, and of methyl penicillonic acid G.

PB L 80127. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, May 31, 1945. (Merck & Co Inc Rept M 65). May 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

Methyl penicillin G sulfone has been found to have two active hydrogen atoms when the heating period of the Zerewitinoff determination was extended to fifteen minutes. This result is compatible with the β-lactam formula. The study of the reaction of oxalyl chloride with substituted amides has been extended. Merck & Co.

PB L 80128. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, May 31, 1945. (Merck & Co Inc Rept M 66). May 1945. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00

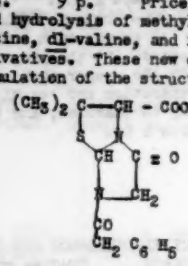
Studies on the preparation and reactions of: (A) β-lactam models, (B) thiazolidines, (C) N-acylpenicillamine derivatives, (D) α-N-substituted penicilloates, and (E) penicilloic acid derivatives. Merck & Co.

PB L 80129. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, May 31, 1945. (Merck & Co Inc Rept M 67). May 1945. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

The infra-red absorption spectrum of the crystalline derivative of the reaction between thiocyanic acid and the β-lactam of α-cyclohexylacetamido-β-cyclohexylamino-Propionic acid is similar to that of the methyl penicillin G. The relative rates of acid hydrolysis of the β-lactam of desthiopenicilloic acid G of the β-lactam of α-cycloheryl-acetamido-β-cyclohexylaminopropionic acid have been studied. Merck & Co.

PB L 80130. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Jun 30, 1945. (Merck & Co Inc Rept M 68). Jun 1945. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

Acid hydrolysis of methyl desthiopenillonate G has yielded glycine, dl-valine, and formaldehyde in the form of suitable derivatives. These new degradation products allow a better formulation of the structure of penillonic acid G:

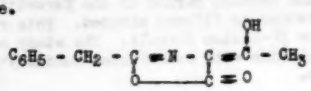


PB L 80131. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Jun 30, 1945. (Merck & Co Inc Rept M 69). Jun 1945. 19 p. Price: Microfilm-$1.00 - Photostat-$2.00

Studies are reported on the preparation and reactions of the following: (A) β-lactam models, indicated structures are in best agreement with the present data, (B) thiazolidines, (C) penicilloic acid derivatives, (D) thiazoline derivatives, (E) N-acylpenicillamine and N-acylvaline derivatives, (F) oxazoles, and (G) penicillamine disulfides. Merck & Co.

PB L 80132. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, Jun 30, 1945. (Merck & Co Inc Rept M 70). Jun 1945. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

The action of acetic anhydride on phenylacetyle glycine was studied. Evidence is presented which indicates structure I as probable.



(I)

N-Phenylacetyl-N-acetyl methylamine has been prepared and its infra-red absorption spectrum determined. The infra-red absorption spectra of several new compounds are presented. Merck & Co.

PB L 80133. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. A rapid micromethod for the fluorometric determination of penicillin. (Merck & Co Inc Rept M 71). n. d. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

A fluorometric method for the determination of small amounts of penicillin has been described. The method is precise to ± 10 per cent. It is a comparatively simple method which is carried out almost entirely in a separatory funnel, and it is a relatively rapid method which may be used by a trained operator to complete 8 analyses in about 2 hours. Preliminary results indicate that the method is applicable to the analysis of blood and urine. Merck & Co.

PB L 80134. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Jul 31, 1945. (Merck & Co Inc Rept M 72). Jul 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

The β-lactam of d- (α)-desthiopenicilloic acid G has been converted into a benzyl derivative by treatment with sodium and benzyl chloride in liquid ammonia. A model β-lactam and the methyl ester of the β-lactam of d-(α)-desthiopenicilloic acid have been converted by thermal treatment into 2-benzylidene-4-methyl-5(2)-oxazolone; these reactions represent a β-lactam-oxazolone conversion. Merck & Co.

PB L 80135. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Jul 31, 1945. (Merck & Co Inc Rept M 73). Jul 1945. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

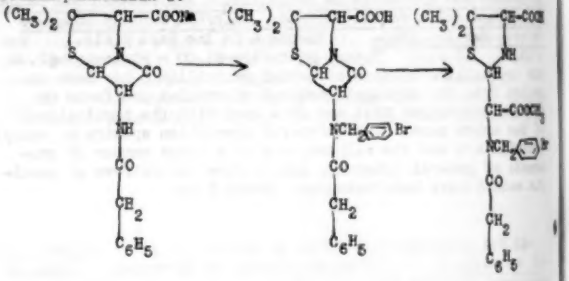
Studies on the preparation and reactions of: (A) various β-lactams, (B) oxazolones, and (C) penicilloic acid derivatives. Merck & Co.

PB L 80136. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, Jul 31, 1945. (Merck & Co Inc Rept M 74). Jul 1945. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

An attempt has been made to nitrosate penicillin G through the use of nitrosyl chloride. The preparations of N-nitroso-N-methyl phenylacetamide, N-nitroso-N-cyclohexylacetamide, and N-nitrosodiphenylamine are described and the infra-red absorptions given. Evidence is advanced which indicate that the nitroso derivative of ethyl phenaceturate was formed but is a rather unstable liquid. With methyl penicillin G, methyl penicillin G sulfone, and the β-lactam of methyl d-(α)-desthiopenicilloate G, there was evidence that a nitrosated product was formed but are unstable liquids. Merck & Co.

PB L 80137. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Aug 31, 1945. (Merck & Co Inc Rept M 75). Aug 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

A product which has a composition in agreement with p-bromobenzyl derivative of α-methyl d-(α)-penicilloic acid G has been obtained by stepwise alkylation and methanolysis of sodium penicillin G.



PB L 80138. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Aug 31, 1945. (Merck & Co Inc Rept M 76). Aug 1945. 14 p. Price: Microfilm-$1.00 - Photostat-$1.00

The following data are reported: (A) experiments with penicillenic acid derivatives, (B) penillonic acid derivatives, (C) penicilloic acid derivatives, (D) reactions of 5(4)- and 5(2)-oxazolones, (E) synthesis of intermediate thiazolidines, and (F) the use of various Grignard reagents and other organometallic compounds in the preparation of the β-lactam of β-anilino-α-phenylacetamidopropionic acid.

PB L 80139. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on isolation. Informal monthly progress report, Sep 28, 1945. (Merck & Co Inc Rept M 77). Sep 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Data concerning the investigation of tertiary amines other than triethylamine in the isolation of penicillin G. Of those investigated three gave crystalline salts. These are: N-methylmorpholine, N-ethylmorpholine, and N-ethylpiperidine. The latter was particularly suited for the isolation of penicillin G with respect to ease of manipulation and yield. Using clinical penicillin of about 600 u/mg., containing more than 90% penicillin G by differential assay, 40-45% yield of pure sodium penicillin G can be obtained. Merck & Co.

PB L 80140. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part II. Studies on synthesis. Informal monthly progress report, Sep 28, 1945. (Merck & Co Inc Rept M 78). Sep 1945. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The following data are reported: (A) studies on reactions of oxazolones, (B) penicillamine and acrylic acid derivatives, (C) experiments on penicilloic acid derivatives, (D) experiments on the synthesis of intermediate thiazolidines, and (E) the use of methyl magnesium iodide in the preparation of the β-lactam of β-anilino-α-phenylacetamidopropionic acid. Merck & Co.

PB L 80141. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part III. Physical chemical section. Informal monthly progress report, Sep 30, 1945. (Merck & Co Inc Rept M 79). Sep 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The experimental work reported constitutes a continuation of the nitrosation studies given in Merck Rept M-74; PB 80136. Evidence is presented which shows that the N-nitroso derivative of the β-lactam of β-methyl-d-(α)-desthiopenicilloate G has been prepared as a well defined crystalline substance and the validity of the -lactam structure for this substance is further proven. Evidence is also presented that the N-nitroso derivative of the β-lactam of β-anilino-α-phenylacetamidopropionic acid has been prepared. Finally, evidence is presented which appears to prove that the N-nitroso derivatives of simple monosubstituted amides are characterized in the ultraviolet by the presence of two absorption maxima at about 4050 and 4250 Å each having EM values of about 100. Merck & Co.

PB L 80142. U. S. OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT. COMMITTEE ON MEDICAL RESEARCH. Studies on the structure and synthesis of penicillin G and related compounds. Part I. Studies on structure. Informal monthly progress report, Oct 31, 1945. (Merck & Co Inc Rept M 80). Oct 1945. 13 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report is divided into two parts. Part I. Studies on structure and part II studies on synthesis. Part I - Methanolysis of the β-lactam of benzyl-d-α-destheopenicilloic acid G and an attempt to prepare sodium salt of α-amide of N-isobutyryl-d-α-penicilloate G. Part II- (A) studies on reactions of oxazolones, (B) derivatives of penicillamine and α-amino-β,β-diethoxypropionic acid, (C) experiments on the synthesis of intermediate thiazolidines, (D) thermal decomposition of 1,2-diphenylpyrrolidinedione-4,5, and (E) experiments on model β-lactams. Merck & Co.

Dyes

* PB L 80376. ADAMS, A. W. I. G. Farbenindustrie: The manufacture of certain Fast Bases and their intermediates and of intermediates for naphthol AS products, etc. (BIOS Final Rept 1149, Item 22). Sep-Oct 1946. 154 p. Price: Microfilm-$4.00 - Photostat-$11.00
The manufacture of the various members of the Naphthol AS series and of Fast Salts, Rapidogens and Rapid Fast Colors has been described in BIOS Final Report 988, "German dyestuffs and dyestuff intermediates, azoic products including Naphthols, Fast salts, nitrosamines, and Rapid Fast Salts, Rapidogens," PB 60885, V. 5, p. 378, this Bibliography. In addition, the manufacture of some of the most important Fast Bases, has been reported, together with many other intermediate products, in BIOS Final Reports 986 and 1157, PB 77764 and PB 69127, V. 6, p. 189 and V. 6, p. 190, respectively. The present report contains information which was not included in the other reports on the manufacture of Fast Bases, intermediate products for the Naphthols, and the manufacture of stabilizers for Rapidogens. Appendix 1 is a list of Fast Bases manufactured by the I. G.

* PB L 81027. ADAMS, D. A. W. and others. I. G. Farbenindustrie: The manufacture of miscellaneous naphthalene intermediates. (BIOS Final Rept 1152, Item 22). n. d. 133 p. Price: Microfilm-$3.00 - Photostat-$9.00
The manufacture of naphthalene intermediates at the various I. G. plants have been described in BIOS Final Reports 986 and 1157. The present report covers the dyestuffs intermediates not already reported in those reports. The compounds are dealt with under the following headings: (1) Naphthalene sulfonic acids; (2) hydroxynaphthalenes and their sulfonic acids; (3) dihydroxynaphthalenes, their sulfonic acids, and derivatives; (4) naphthylamine sulfonic acids; (5) dinitro- and diamino - naphthalenes and their sulfonic acids; (6) aminonaphthols and their sulfonic acids and derivatives (derivatives of J-acid, Gamma acid and of miscellaneous aminonaphthols); and (7) miscellaneous naphthalene derivatives. Appendix 1 lists reports which were submitted to the Wissenschaftlicher Zetko-Austauch. No detailed information is included on plant in this report as the sulfonators, reducers, fusion vessels, tanks, etc. employed, have been of the usual design and have been adequately covered by the earlier reports. For the processes in use at Höchst and Ludwigshafen, see BIOS Final Report 986, PB 77764, V. 6, p. 189, this Bibliography. For Ludwigshafen processes, see BIOS Final Report 1157, PB 69124, V. 6, p. 190. The manufacture of α-nitronaphthalene, α-naphthylamine, and α-naphthol, because of their importance, have been reported separately in BIOS Final Report 1143, PB 77720, V. 6, p. 100.

* PB L 79309. ADAMS, D. A. W. and others. I. G. Farbenindustrie A. G.: Manufacture of sulphur dyestuffs and their intermediates at Mainkur. (BIOS Final Rept 1155, Item 22). Sep 1946. 57 p. Price: Microfilm-$2.00 - Photostat-$4.00
This report supplements the information given in BIOS Final Report 983, "Manufacture of Thioindigoid and sulfur dyestuffs at Hoechst and Mainkur" and in BIOS Final Report 1156, "Manufacture of thioindigoid dyestuffs and their intermediates at Hoechst and Mainkur," PB 80346. Abstracts of these two reports appear currently in this Bibliography. The manufacturing processes are presented under the following headings: (1) Sulfur dyestuffs; (2) sulfur dyestuff bases; and (3) miscellaneous intermediate products for sulfur dyestuffs. With the exception of Hydron Olive G X and a few compounds identified only by their Geneva names, the dyestuffs are all of the Immedial series.

* PB L 80346. ADAMS, D. A. W. and others. I. G. Farbenindustrie, A.G.: Manufacture of thioindigoid dyestuffs and their intermediates at Hoechst and Mainkur. (BIOS Final Rept 1156, Item 22). n. d. 29 p. Price: Microfilm-$1.00 - Photostat-$2.00
The information on thioindigoid dyestuffs and their intermediates contained in this report is additional to that contained in the following BIOS Final Reports: BIOS Final Report 986, "Manufacture of Intermediates for dyestuffs at Griesheim, Hoechst, Ludwigshafen, Mainkur and Offenbach," PB 77764, v. 6, p. 189, this Bibliography; BIOS Final Report 983, "Manufacture of thioindigoid and sulfur dyestuffs at Hoechst and Mainkur, PB 79226; and BIOS Final Report 1155, "Manufacture of sulfur dyestuffs and their intermediates at Mainkur," PB 79309. Both BIOS 983 and 1155 appear currently in this Bibliography. These four reports can be considered as

UNIVERSITY OF MICHIGAN LIBRARIES

containing all existing information on the I. G. range of thioindigoid dyestuffs and the requisite intermediates. Where the method of manufacture of the intermediate is not given in this report, it will usually be found in one of the other reports. The process details were supplied by Dr. Marschall at Hoechst and Dr. Ochwat at Mainkur.

PB L 70338. ANORGANA G.M.B.H., GENDORF/OBERBAYERN, GERMANY. A collection of reports in the field of dye chemistry. (FIAT Microfilm Reel C-9, Frames 9462-10900). (See also FIAT Microfilm Reel C-10, PB 70339). 1934-1941. 719 f. Price: Microfilm-$6.00 - Enlargement Print-$72.00

This FIAT microfilm reel consists of 179 items dealing chiefly with the production of dyes and dye intermediates of the I.G. Farbenindustrie A. G. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
9462-9464 PB L 70338	This document is a continuation of the report on frames 9446-9461 of reel C 8 (PB 70337).	$ 1.50
9465-9471 PB L 70338	Experiments concerning substitution products of 3,4,5,8,9,10-hexahydropyrene. By Becker. 1934. In German.	1.50
9472-9501 PB L 70338	Experiments in the chrysene series. By Vollmann and Becker. 1934. In German.	3.00
9502-9504 PB L 70338	Condensation of anthraquinone derivatives with aromatic carbinols. By Brunner. 1934. In German.	1.50
9505-9524 PB L 70338	On dioxazine dyes. 1934. In German.	2.00
9525-9527 PB L 70338	On a benzoylated "Pyrensäure" and dyes therefrom. By Sieber. 1935. In German.	1.50
9528-9532 PB L 70338	Anthraquinone oxazole carbazoles. By Schlichemeier. 1935. In German.	1.50
9533-9535 PB L 70338	Vat dyes of the anthracene series. By Eckert and Braunsdorf. 1935. In German.	1.50
9536-9540 PB L 70338	Dibenzopyrene quinone derivatives. By Meissner. In German.	1.50
9541-9554 PB L 70338	"Küpenblaugrün 123 Hoe." By Eckert. 1935. In German.	1.50
9555-9564 PB L 70338	New anthraquinone dyes which can be chromated. By Schlichemeier and Meissner. 1935. In German.	1.50
9565-9575 PB L 70338	Chrome dyes of the anthraquinone series. By Diefenbach and Krauss. 1935. In German.	1.50
9576-9584 PB L 70338	New acid wool dyes of the anthraquinone series. By Diefenbach and Eggert. 1935. In German.	1.50
9585-9591 PB L 70338	New acid sulfamide dyes of the anthraquinone series. By Diefenbach and Eggert. 1935. In German.	1.50
9592-9596 PB L 70338	Derivatives of 1,4-dichloroanthraquinone. By Römer. 1935. In German.	1.50
9597-9602 PB L 70338	3-Halogenpyrenes and their reaction products. By Wolfram and Schnurr. In German.	1.50
9603-9614 PB L 70338	Anthraquinone mono- and diaryl di-hydrazines as acid wool dyes. By Diefenbach and others. 1935. In German.	1.50
9615-9618 PB L 70338	Acid wool dyes from mono-, di-, and trinitro-p-chlorobenzophenone-o'-carboxylic acid. By Greune and Krämer. 1935. In German.	1.50
9619-9621 PB L 70338	Substantive dyes of the "Bromaminsäure" (1-amino-4-bromoanthraquinone-2-sulfonic acid) series. By Müller. 1935. In German.	1.50
9622-9623 PB L 70338	Acid wool dyes of the "Bromaminsäure" series which are fast to fulling. By Koch. 1935. In German.	1.50
9624-9629 PB L 70338	Chrome dyes of the anthraquinone series. By Diefenbach. 1935. In German.	1.50
9630-9633 PB L 70338	Benzoquinone dianilides as leather dyes. By Punne and Reuter. 1935. In German.	1.50
9634-9638 PB L 70338	Dioxazines as mordant dyes. By Punne and Reuter. 1935. In German.	1.50
9639-9643 PB L 70338	Preparation of anthracene-peri-dicarboxylic acids. By Eckert and Braunsdorf. 1935. In German.	1.50
9644-9650 PB L 70338	New substituted "Tetra" acids and dyes therefrom. By Sieber and Eckert. 1935. In German.	1.50
9651-9657 PB L 70338	On 3-mercapto quinaldine-4-carboxylic acids and thioindigo derived therefrom. By Schlichemeier and Runne. 1935. In German.	1.50
9658-9670 PB L 70338	"Küpenblaugrün 123 Höchst". By Eckert. 1935. In German.	1.50
9671-9676 PB L 70338	Arylated dehydro-tribenzo-dipyrans. By Punne and Streeck. 1935. In German.	1.50
9677-9681 PB L 70338	Vat dyes derived from anthraquinone-1,2-indazole. 935. In German.	1.50
9682-9688 PB L 70338	Reactions with halogenation products of simple arylido anthraquinones. 1935. In German.	1.50
9689-9700 PB L 70338	Examinations in the pyrene series. By Vollmann. 1935. In German.	1.50
9701-9709 PB L 70338	Behavior of pyrene and its halogen derivatives in the presence of aluminum chloride. By Vollmann. 1935. In German.	1.50
9710-9733 PB L 70338	Substitution of pyrene-quinone. By Streeck. 1935. In German.	2.50
9734-9742 PB L 70338	Effect of glycerol and sulfuric acid on pyrene. By Vollmann and Spiess. 1935. In German.	1.50
9743-9748 PB L 70338	Preparation of 3- and 4-phenyl-1-napthol. By Limpach. 1935. In German.	1.50
9749-9751 PB L 70338	New process for the preparation of dichlorindatin and "Indanthrenmarkisblau 3 GK". By Hilpert. 1935. In German.	1.50
9752-9757 PB L 70338	Vat dyes of the naphthalic acid series. By Eckert and Quint. 1936. In German.	1.50
9758 PB L 70338	List of patent applications. In German.	1.50
9759-9761 PB L 70338	Indigoid dyes from 4-methyl-5,6-dichloro-7-methoxy isatin. By Runne. 1936. In German.	1.50
9762-9769 PB L 70338	Reactions with 1,4,6-trichloroanthraquinone. By Sedlmeyer. 1936. In German.	1.50

Dyes (contd)

9770-9776 PB L 70338 Indigoid dyes derived from phthalimide. By Limpach. 1936. In German. 1.50

9777-9780 PB L 70338 Vat dyes of the anthraquinone dithiazole series. By Kruta. 1936. In German. 1.50

9781-9785 PB L 70338 3,5,8,10-tetraaroyl pyrenes. By Corell. 1936. In German. 1.50

9786-9796 PB L 70338 New substantive dyes. By Eckert and Braunsdorf. 1936. In German. 1.50

9797-9800 PB L 70338 Separation of sulfo groups in dioxazine dyes. By Thiess and others. 1936. In German. 1.50

9801-9803 PB L 70338 Substantive dyes of the "Bromaminsäure" series. By Müller. 1936. In German. 1.50

9804-9815 PB L 70338 Rubicene and its application for dyes. By Langstein. 1936. In German. 1.50

9816-9823 PB L 70338 Preparation of p-diarylamino terephthalic acids and of quinacridones made therefrom. By Eckert and Schilling. In German. 1.50

9824-9845 PB L 70338 The influence of substituents on the light fastness of quinophthalone sulfonic acids. By Schlichemeier. 1936. In German. 2.50

9846-9851 PB L 70338 Experiments in the phthalocyanine series. By Eckert and Quint. 1936. In German. 1.50

9852-9865 PB L 70338 New amino-hydroxy-anthraquinones. By Schlichemeier and Berlin. 1936. In German. 1.50

9866-9872 PB L 70338 Derivatives of "Brillantsulfoflavin FF". By Eckert and Sieber. 1936. In German. 1.50

9873-9878 PB L 70338 1-Aroyl-2-naphthylamines. By Schaich. 1936. In German. 1.50

9879-9884 PB L 70338 Nitration and oxidation of 2,3-benzanthracene and 2,3-benzo-9,10-dihydroanthracene. By Schumacher. 1936. In German. 1.50

9885-9892 PB L 70338 Preparation of 5-hydroxy-acenaphthene and its sulfonic acids capable of coupling. By Sander. 1936. In German. 1.50

9893-9896 PB L 70338 Dioxazine-carboxylic acids and their use as dyes and dye intermediates. Verification of the French Patent 789 805. By Reuter. 1936. In German. 1.50

9897-9905 PB L 70338 Anthraquinone vat dyes with trifluoromethyl groups. By Schlichemeier and Berlin. 1936. In German. 1.50

9906-9913 PB L 70338 Vat dyes of the benzanthrone pyrazole anthrone series. By Wilke. 1936. In German. 1.50

9914-9918 PB L 70338 Red vat dyes from aminoquinizarin and aminopurpurin. By Schlichemeier and Verlin. 1936. In German. 1.50

9919-9931 PB L 70338 Attempts at preparing isologues of "Küpenblaugrün 123". By Eckert and Braunsdorf. 1936. In German. 1.50

9932-9934 PB L 70338 Dyes from 3-mercapto quinaldine-4-carboxylic acid. By Runne. 1936. In German. 1.50

9935-9944 PB L 70338 Oxazines, oxthins, and thiazines of the anthraquinone series. By Diefenbach and Keller. 1936. In German. 1.50

9945-9949 PB L 70338 Acid wool dyes from asymetrically N-substituted 1,4-diaminoanthraquinones. By Zahn and Koch. 1936. In German. 1.50

9950-9954 PB L 70338 Partial exchange of 1,4-dichloro anthraquinone. By Römer. 1936. In German. 1.50

9955-9990 PB L 70338 Hydroxy-trimellitic acids and dyes therefrom. By Eckert and Schilling. 1936. In German. 4.00

9990a-9997 PB L 70338 Green chrome dyes of the anthraquinone series. By Schlichemeier and Weissner. 1936. In German. 1.50

9998-10001 PB L 70338 Possibilities of using the formaldehyde-hydrochloric acid reaction. By Brunner. 1936. In German. 1.50

10002-10011 PB L 70338 Research on indigosols. By Basler. 1936. In German. 1.50

10012-10016 PB L 70338 The constitution of x,x-dimethylpyrene. By Becker. 1936. In German. 1.50

10017-10024 PB L 70338 Preparation and properties of 1-hydroxypyrene, 1-aminopyrene and 1,8,9-naphthanthrone. By Vollmann and Becker. 1936. In German. 1.50

10025-10027 PB L 70338 Process for separating mixtures of chlorinated phthalic anhydrides. (Verification of the patent application I 46 426 IV c/120 of the I. G. I.). By Koch. 1936. In German. 1.50

10028-10032 PB L 70338 Vat dyes from 1,2-phthaloyl-carbazole-carboxylic acids. By Corell and Popp. 1937. In German. 1.50

10033-10037 PB L 70338 Anthrimides and carbazoles from 1,4,5-trichloro and 1,4,5,8-tetrachloro anthraquinone. By Bestian. In German. 1.50

10038-10041 PB L 70338 New dyes of the dibenzopyrenequinone series. By Corell. 1937. In German. 1.50

10042-10048 PB L 70338 Wool vat dyes of the 2-thionaphthene-3-indole indigo series. By Thiess. 1937. In German. 1.50

10049-10052 PB L 70338 Anthraquinone acridone dyes. (Verification of U. S. Patent 2,033,182 of Dupont). By Quint. 1937. In German. 1.50

10053-10056 PB L 70338 Wool dyes of the dianthrimide series. By Römer. 1937. In German. 1.50

10057-10069 PB L 70338 Reaction products of alpha-halogen anthraquinones with sulfamide. By Renn. 1937. In German. 1.50

10070-10073 PB L 70338 Chrome dyes from 1-hydroxy-2,4-dihalogen anthraquinone-5- / or 6, /, or 8 / monosulfonic acids. By Schlichemeier. 1937. In German. 1.50

10074-10087 PB L 70338 Hydroxytrimellitic acids and dyes therefrom. By Eckert and Schilling. 1937. In German. 1.50

10088-10091 PB L 70338 Chrome dyes from 4-chloro-3-nitrobenzophenone-2'-carboxylic acid. By Bestian. 1937. In German. 1.50

10092-10097 PB L 70338 New chrome dyes of the anthraquinone series. By Eckert and Quint. 1937. In German. 1.50

10098-10110 PB L 70338 New dioxazine dyes. By Langbein and Reuter. 1937. In German. 1.50

10111-10116 PB L 70338 Sulfur dyes from dioxazines and dioxazine sulfonic acids. By Langbein. 1937. In German. 1.50

10117-10121 PB L 70338 Verifying the patent application I 53521 of I. G. I. concerning anthraquinone dyes. By Zahn and Koch. 1937. In German. 1.50

10122-10133 PB L 70338 Water-soluble acetate rayon dyes. By Eckert and Braunsdorf. 1937. In German. 1.50

10134-10143 PB L 70338 Rearrangement of halogen hydrocarbons by means of aluminum chloride, and dyes produced from 1,3-dichloro-4,6-dinitrobenzene. By Corelli and others. 1937. In German. 1.50

10144-10149 PB L 70338 Carboxyl derivatives of triaryl carbinol. By Becker. 1937. In German. 1.50

10150-10155 PB L 70338 5,6,7,8-Tetrahydro quinizarin. By Koch. 1937. In German. 1.50

10156-10172 PB L 70338 Derivatives of quinoxaline bases. By Jutz. 1937. In German. 2.00

10173-10179 PB L 70338 New Derivatives of fluorene and fluorenone, and production of dyes therefrom. By Langbein. 1937. In German. 1.50

10180-10184 PB L 70338 Condensation of phenyl acetic acid chloride with aromatic ketone chlorides. By Münnchen. 1937. In German. 1.50

10185-10194 PB L 70338 Anthraquinone dyes with trifluoromethyl groups. By Schlichemeier and Berlin. 1937. In German. 1.50

10195-10205 PB L 70338 Anthraquinone dyes with trifluoro methyl groups. By Schlichemeier and Berlin. 1937. In German. 1.50

10206-10209 PB L 70338 New dyes of the dibenzopyrenequinone series. By Corell. 1937. In German. 1.50

10210-10217 PB L 70338 Synthesis and halogenation of 3,4,8,9-dibenzanthanthrone. By Bestian and v. Freyberg. 1937. In German. 1.50

10218-10223 PB L 70338 Wool vat dyes of the 2-thionaphthene-3-indoleindigo series. By Thiess. 1937. In German. 1.50

10224-10234 PB L 70338 Newer indigosols. By Besler. 1937. In German. 1.50

10235-10244 PB L 70338 Reaction products of 2-halogen anthraquinones with sulfamide. By Renn. 1937. In German. 1.50

10245-10250 PB L 70338 Isatin and thionaphthene quinone phenylhydrazones as dyes. By Thiess. 1937. In German. 1.50

10251-10259 PB L 70338 Chrome dyes of the anthraquinone series. By Schlichemeier and others. 1937. In German. 1.50

10260-10274 PB L 70338 Hydroxy trimellitic acids and dyes therefrom. By Eckert and Schilling. 1937. In German. 1.50

10275-10287 PB L 70338 Asymmetrical dioxazine dyes. By Langbein. 1937. In German. 1.50

10288-10293 PB L 70338 Derivatives of hystazarin. By Müller. 1937. In German. 1.50

10294-10298 PB L 70338 Catalytic reduction of alpha-hydroxyanthraquinones to hydroxyanthrones. By Zahn and Koch. 1937. In German. 1.50

10299-10306 PB L 70338 Hydrogenation products of alpha-hydroxyanthraquinone. By Zahn and Koch. 1937. In German. 1.50

10307-10316 PB L 70338 Substituted 2-hydroxyanthracene-3-carboxylic acids. By Eckert and others. 1937. In German. 1.50

10317-10321 PB L 70338 Nitration of anthraquinone-2,6- and 2,7-disulfonic acid. By Runne. 1937. In German. 1.50

10322-10329 PB L 70338 Preparation and properties of 1-(N)-2-pyridino pyrene. By Quint. 1937. In German. 1.50

10330-10334 PB L 70338 New synthesis of 3-hydroxycarbazoles. By Zahn and Schimmelschmidt. 1937. In German. 1.50

10335-10342 PB L 70338 Benzo-3-hydroxydiphenylene oxides and hydroxy-benzo-xanthenes. By Schimmelschmidt and Pfeuffer. 1937. In German. 1.50

10343-10351 PB L 70338 Preparation of 4,5-diamino- and 5-nitro-4-amino-2-hydroxy-1-benzoic acids and dyes therefrom. By Quint. 1937. In German. 1.50

10352-10370 PB L 70338 Oxazole, thiazole, and imidazole derivtives of naphthol sulfonic acids. By Sedlmayr. 1937. In German. 2.00

10371-10380 PB L 70338 1,9,8-Naphthanthrone 10. By Vollmann. 1938. In German. 1.50

10381-10388 PB L 70338 Substitution products of 1,9,8-napthanthrone and dyes. By Corell and Eichler. 1938. In German. 1.50

10389-10392 PB L 70338 Closure of the phenanthridone ring in the presence of sulfuric acid. By Limpach. 1938. In German. 1.50

10393-10402 PB L 70338 Vat dyes derived from "Indanthrengrau M". By Wilke. 1938. In German. 1.50

10403-10409 PB L 70338 Dyes from o-halogen anthraquinone carboxylic acids. By Braunsdorf. 1938. In German. 1.50

10410-10413 PB L 70338 Preparation of 3,9-dibenzoylene-2,8-chrysene and vat dyes made therefrom. By Quint. 1938. In German. 1.50

10414-10420 PB L 70338 Alkoxy perylene tetracarboxylic acids and vat dyes therefrom. By Eckert and Quint. 1938. In German. 1.50

10421-10426 PB L 70338 Wool vat dyes of the 2-thionaphthene-3-indole-indigo series. By Thiess. 1938. In German. 1.50

10427-10436 PB L 70338 Wool vat dyes with trifluoromethyl groups. By Thiess and Münnchen. 1938. In German. 1.50

10437-10440 PB L 70338 Acid wool dyes of the anthraquinone series with aryiglycolether radicals in beta-position. By Koch. 1938. In German. 1.50

10441-10449 PB L 70338 2,5-Diarylamino-1,4-benzoquinone and dioxazine dyes containing complex-forming groups. By Langbein. 1938. In German. 1.50

10450-10456 PB L 70338 Production of "Siriuslichtblau FFRL". By Thiels and Hoffmann. 1938. In German. 1.50

10457-10480 PB L 70338 Carbazole derivatives. By Deresser and Eichler. 1938. In German. 2.50

10481-10485 PB L 70338 Anthrachrysone dialdehyde. By Römer. 1938. In German. 1.50

10486-10493 PB L 70338 Use of alpha-halogen-alpha, beta-unsaturated aldehydes in the preparation of benzanthrones. By Schneider. 1938. In German. 1.50

10494-10498 PB L 70338 Halogenation of acenaphthene. By Wilke. 1938. In German. 1.50

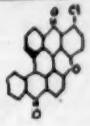
10499-10509 PB L 70338 Azosols. By Besler and Pfeuffer. 1938. In German. 1.50

10510-10526 PB L 70338 Self-couplers on acetylcellulose. By Müller. 1938. In German. 2.00

10527-10547 PB L 70338 Uncolored self-coupling dyes. By Sedlmayr and Renn. 1938. In German. 2.50

10548-10553 PB L 70338 Anthraquinone vat dyes with trifluoromethyl groups. By Berlin. 1938. In German. 1.50

10554-10558 PB L 70338 Blue-green vat dye, 6''-chloro-4,3''-oxo-hetero-1-coer-7',7''-dianthrone, prepared by heating 2'-hydroxy-5'-chloro-benzoylbenzoic acid with beta-hydroxy-anthracene in phosphorus oxychloride. The chemical structure of the above compound is



By Becker. 1938. In German. 1.50

10559-10565 PB L 70338 New vat dyes of the naphthalimide series. By Braunsdorf. 1938. In German. 1.50

10566-10571 PB L 70338 Indigosols of azo dyes. By Besler. 1938. In German. 1.50

10572-10578 PB L 70338 New dyes of the "Bromaminsäure" series. By Bestian. 1938. In German. 1.50

10579-10588 PB L 70338 Phthaloyl indoles, phthaloyl tetrahydro carbazoles and dyes. By Kühn. 1938. In German. 1.50

10589-10592 PB L 70338 1-Hydroxy-4-bromo-anthraquinone-2-methane sulfonic acid and dyes therefrom. By Schlichemeier and Meissner. 1938. In German. 1.50

10593-10607 PB L 70338 Hydroxy-trimellitic acids and dyes therefrom. By Eckert and others. 1938. In German. 1.50

10608-10616 PB L 70338 Dioxazine dyes with carboxyl groups. By Langbein and Thiele. 1938. In German. 1.50

10617-10622 PB L 70338 Substituted 1-amino-anthraquinones as bases for "Naphthol AS" dyes. By Müller. 1938. In German. 1.50

10623-10625 PB L 70338 Acetate rayon blue from tetrahydroquinizarin. By Zahn and Koch. 1938. In German. 1.50

10626-10633 PB L 70338 Derivatives and dyes from benzene-3-methyl-benzanthrone. By Runne and Schneider. 1938. In German. 1.50

10634-10639 PB L 70338 Observations in the benzanthrone series. By Zahn and Pfeuffer. 1938. In German. 1.50

10640-10657 PB L 70338 Synthesis of halogenated dibenzopyrene quinones. By Tampke. 1939. In German. 2.00

10658-10665 PB L 70338 Dyes from halogenated dibenzopyrene quinones. By Corell and Mattausch. 1939. In German. 1.50

10666-10678 PB L 70338 Anthraquinone dyes with trifluoromethyl groups. By Schlichemeier and others. 1939. In German. 1.50

10679-10687 PB L 70338 Alkoxy-perylene tetracarboxylic acids and dyes therefrom. By Eckert and Quint. 1939. In German. 1.50

10688-10695 PB L 70338 Results in the development of "Küpenbla. F 113". By Wilke. 1939. In German. 1.50

10696-10706 PB L 70338 Indigosols of azo dyes. By Bester and Kühn. 1939. In German. 1.50

10707-10714 PB L 70338 Preparation of a stable powder of "Indigosolblau IBC". By Diefenbach and Kruta. 1939. 1.50

10715-10719 PB L 70338 New acid wool dyes of the anthraquinone series that are fast to washing and fulling. By Koch. 1939. In German. 1.50

10720-10725 PB L 70338 2-(Chlorophenyl)-quinizarins and acid wool dyes therefrom. By Zahn and Pfeuffer. 1939. In German. 1.50

10726-10736 PB L 70338 Hydroxy-trimellitic acids and dyes therefrom. By Eckert and Schilling. 1939. In German. 1.50

10737-10743 PB L 70338 Yellow chrome dyes of the type of "Chromechtgelb 5 GD". By Eckert and others. 1.50

10744-10749 PB L 70338 Azo compounds of the anthraquinone series. By Römer. 1939. In German. 1.50

10750-10756 PB L 70338 Derivatives of benzene-3-methyl-benzanthrone. By Runne and Schneider. 1939. In German. 1.50

10757-10758 PB L 70338 Improved process for the intramolecular dehydrogenation of aromatic nuclei according to the British Patent 501897 of CIBA. By Corell. 1939. In German. 1.50

10759-10761 PB L 70338 Verification of the British patent application 14,331 (or the French Patent 537,847) concerning ethylthioglycolic amide. By Besler. 1939. In German. 1.50

10762-10769 PB L 70338 Navy blue vat dyes. By Schlichemeier. 1940. In German. 1.50

10770-10782 PB L 70338 Vat dyes from substituted indandiones. By Fruschke and Quint. 1940. In German. 1.50

10783-10788 PB L 70338 Synthesis of 1,5,9,10-anthracene tetracarboxylic acid and derivation of dyes therefrom. By Becker. 1940. In German. 1.50

10789-10793 PB L 70338 Synthesis of "Indanthrenbordo RR". By Becker. 1940. In German. 1.50

10794-10802 PB L 70338 Indigoid dyes containing trifluoromethyl groups. By Heyna. 1940. In German. 1.50

10803-10808 PB L 70338 "Neocotons" of the anthraquinone series. By Schlichemeier. 1940. In German. 1.50

10809-10816 PB L 70338 Water-soluble carbonamide dyes and their application. By Corell. 1940. In German. 1.50

10817-10825 PB L 70338 Wool vat dyes from diarylaminobenzoquinone. By Thiess and Männchen. 1940. In German. 1.50

10826-10833 PB L 70338 New chrome dyes. By Diefenbach. 1940. In German. 1.50

10834-10843 PB L 70338 Substituted 1-amino-anthraquinones as bases for "Naphthol AS" dyes. By Müller. 1940. In German. 1.50

10844-10848 PB L 70338 Anthrachrysone dialdehyde. By Römer. 1940. In German. 1.50

10849-10857 PB L 70338 Anthraquinones containing trifluoromethyl groups. By Scherer. 1940. In German. 1.50

10858-10863 PB L 70338 Derivatives of anthraquinone-2-aldehyde. By Römer. 1941. In German. 1.50

Dyes (contd)

10864-10867 PB L 70338 Substituted 1-aminoanthraquinones as bases for "Naphthol AS" dyes. By Haller. 1941. In German. 1.50

10868-10873 PB L 70338 Navy blue vat dyes. By Schlichemeier. 1941. In German. 1.50

10874-10878 PB L 70338 New vat dyes from cyclic ketones of acenaphthene. By Sieber. 1941. In German. 1.50

10879-10884 PB L 70338 Green vat dyes of the anthracene series. By Schlegel. 1941. In German. 1.50

10885-10891 PB L 70338 A new vat blue fast to chlorine and light. By Wilke. 1941. In German. 1.50

10892-10897 PB L 70338 3,3'-di-trifluoromethyl indanthrone and its tetrasulfuric ester. By Schlichemeier. 1941. 1.50

10898-10900 PB L 70338 Synthesis of "Indanthrenbrillantorange G.R." By Eckert and Becker. 1941. In German. 1.50

This report is completed in FIAT reel C 10 (PB L 70339).

PB L 70338-S. ANORGANA G.M.B.H., GENDORF/OBERBAYERN, GERMANY. A collection of reports in the field of dye chemistry. (FIAT Microfilm Reel C-9, Frames 9482-10900, abstract cards). 1934-1941. 196 p. Price: Microfilm-$4.00-Photostat-$14.00

These are short abstracts of the items on reel C 9 (PB 70338) described above. They are prepared by FIAT abstracters in Germany.

* PB L 79226. AVERY, J. and others. Manufacture of thioindigoid and sulphur dyestuffs at Hoechst and Mainkur. (BIOS Final Rept 983, Item 22). Oct-Dec 1945. 150 p. Price: Microfilm-$3.00 - Photostat-$10.00

Part 1 of the report lists the indigo/thioindigo vat dyestuffs manufacturing ranges at I. G., Höchst and Mainkur. The list is not comprehensive because a great number of colors have either gone out of production completely because of inferior properties or prohibitive cost, or are manufactured in extremely small quantities, but all the colors of importance are listed. Wherever the data were available an indication of the average annual production in terms of concentrated color is given; this usually being the average of the 1937 and 1938 productions. The manufacturing details of the more important colors are given. This part also contains notes on the standardizing of Indanthrene pastes at Höchst. Part 2 lists the principal brands manufactured at Mainkur. No attempt has been made to obtain details of the host of mixings, strength variations, and physical forms which were derived from them and the list does not include any Sulfur Blacks, from chlorodinitrobenzene by far the largest bulk of which were manufactured at Wolfen. The specialty Indocarbon brands however were manufactured entirely at Mainkur. The more important processes are described. This part contains some general notes on Hydron Blues, Indocarbons, Sulfur Blacks from chlorodinitrobenzene, and sulfur colors and research developments at Mainkur.

* PB L 81611. BALLHORN, J. W. A. and others. I. G. Farbenindustrie A.G. Manufacture of vat dyestuffs at Hoechst, Mainkur, Leverkusen and Ludwigshafen. (BIOS Final Rept 1493, Item 22). Sep-Nov 1946. 77 p. Price: Microfilm-$2.75 - Photostat-$8.00

The information on vat dyestuffs is supplementary to that contained in BIOS Final Report 987 entitled "Vat dyestuffs and intermediates", PB 75860, v. 6, p. 189, this Bibliography. The present report includes the Algol, Helindole and Indanthrene range of vat dyestuffs manufactured by the I. G. The location of manufacture is given after each dyestuffs, the list being in alphabetical order. The report also contains information on Anthrasol dyestuffs supplementary to BIOS Final Report 960 entitled, "Anthrasols, Heliogens and Sirius Light Blue dyestuffs, PB 65657, v. 3, p. 378, this Bibliography. The Anthrasols are manufactured at Höchst. The present report includes manufacturing processes for Anthrasols Blue I B C (catalytic process), Brilliant Orange I R K, Brilliant Violet I 4 R, Green I 3 G, and its intermediates, Grey I B L, Olive Green I B, Printing Blue I 2 G, Yellow H C G, and Yellow V. Information contained in this report was supplied by I. G. officials, Dr. Marschall, Dr. Ochwat, Dr. Teller, and Dr. Beiliner.

* PB L 81029. CHAMBERLAIN, E. A. J. and others. I.G. Farbenindustrie A.G.: The manufacture of triphenylmethane dyestuffs at Hoechst, Ludwigshafen and Leverkusen. (BIOS Final Rept 1133, Item 22). Jun 1947. 145 p. Price: Microfilm-$3.00 - Photostat-$10.00

Processes are given for triphenylmethane dyestuffs at the three I. G. plants listed above. The general layout and types of vessels used appeared to be identical or very similar to those in use at Leverkusen, described in some detail in BIOS Final Report 1157, "Dyestuffs and intermediates at Leverkusen and Uerdingen factories," PB 69124, V. 6, p. 190, this Bibliography. At Höchst and Ludwigshafen, and particularly at the latter target, the plant appears to be very old. One outstanding exception was a most modern sulfonation plant erected at Höchst just prior to the war, and used on the production of Reflex, Water, and Ink Blues, etc. A list of plant is included in most of the processes. Flowdiagrams are given for the production of Acid Violet 6 BNOO 3130, and for Induline.

PB L 70426. I.G. FARBENINDUSTRIE A.G., OFFENBACH, GERMANY. Reports in the field of dye chemistry. (FIAT Microfilm Reel E 23, Frames 5403-6418) 1925-1941. 1015 f. Price: Microfilm-$6.00 - Enlargement Print-$101.50

The 124 reports reproduced on this FIAT microfilm reel deal chiefly with preparations in the "Naphthol AS" series. Individual items are listed below and will be available as enlargement prints only. Please include PB and frame numbers when ordering particular items from this reel. In German.

Frames	Title	Price
5403-5405 PB L 70426	Neutral rapidogen dyes. By Schaelzer. 1937. In German.	$1.50
5406-5408 PB L 70426	Metal complex coupling components for "Naphthol AS". By Morschel and Modersoh. 1937. In German. (This report is incomplete)	1.50
5409-5411 PB L 70426	These frame numbers are missing.	
5412-5415 PB L 70426	Coupling components for "Naphthol AS" colorings on "Wollstra". By Morschel. 1937. In German (This report is incomplete).	1.50
5416-5418 PB L 70426	Arylides of the 3-hydroxy-fluorene-2 carboxylic acid. By Auth. 1937. In German.	1.50
5419-5425 PB L 70426	A new process for the neutral development of rapidogen dyes. By Schaelzer. 1937. In German.	1.50
5426-5432 PB L 70426	Yellow pigments, fast to overspraying, used as nitro and alkydal lacquers. By Schleifenbaum. 1937. In German.	1.50
5433-5434 PB L 70426	A new violet based on 9-methyl-2-hydroxy-carbazole-3-carboxylic acid. By Auth. 1937. In German.	1.50
5435-5438 PB L 70426	New black bases of the oxazine series. By Haller. 1937. In German.	1.50
5439-5442 PB L 70426	"Variaminblau"-rapidogens. By Havekoss. 1937. In German.	1.50
5443-5444 PB L 70426	Testing "Naphthol AS" brands, sulfonated at the coupling position for	

rapidogen and rapid fast printing. By Meiser. 1937. In German. 1.50

5445-5446 PB L 70426 "Diagen-Red 4 2 B". By Meiser. 1937. In German. 1.50

5447-5448 PB L 70426 Testing sulfonated "Naphthol AS" brands for rapidogen printing. By Meiser. 1937. In German. 1.50

5449-5450 PB L 70426 "Garnet N.B. base." By Rimels, 1937. In German. 1.50

5451-5454 PB L 70426 Recent studies in the field of rapidogen. By Methmann. 1937. In German. 1.50

5455 PB L 70426 The quality of the I.G.F. base. By Hoffmann. 1937. In German. 1.50

5456-5458 PB L 70426 3,3'-dicarboxy-benzidine-6,6'-disulfonic acid as stabilizer for rapidogen dyes. By Meiser and Modersohn. In German. 1.50

5459-5460 PB L 70426 Fasteness to peroxide of AS-SG combinations. By Horschel. 1937. In German. 1.50

5461-5465 PB L 70426 Black combinations fast to peroxide, on the basis of Naphthol AS-SR. By Ritter-Wolff and Horschel. 1937. In German. 1.50

5466-5476 PB L 70426 State of the patent disputes with the firms "Pharma," "DuPont", "Acna," and "Kuhlmann" in the field of rapidogen. By Caner. 1936. In German. 1.50

5477-5480 PB L 70426 Scientific studies in the field of "Naphthol AS". By Zitscher. 1940. In German. 1.50

5481-5486 PB L 70426 Short report on the developments in the field of "Naphthol AS" during the first months of the war since Sep 1939. By Hagenboecker. 1940. In German. 1.50

5487-5491 PB L 70426 Rapidogen-bordeaux dyes free from nitro groups. Author and date unknown. In German. 1.50

5492-5494 PB L 70426 The influence of treatment with "Solidogen AS" on the fastness to bleaching of "Naphthol AS" dyeings. By Seidenfaden. n.d. In German. 1.50

5495-5499 PB L 70426 Indigosols from "Naphthol AS" dyes. Author and date unknown. In German. 1.50

5500 PB L 70426 This frame number is missing.

5501-5505 PB L 70426 Naphthols, soluble in acids. By Seidenfaden. n. d. In German. 1.50

5506-5508 PB L 70426 Aromatic amines substituted by 1,2 diketo groups as "Naphthol AS" bases. By Seidenfaden. n.d. In German. 1.50

5509-5515 PB L 70426 Short report on the developments of the "Naphthol AS" field from Jan-Oct 1939. By Seidenfaden. n.d. In German. 1.50

5516-5518 PB L 70426 Experiments to carboxylate B-naphthol in solvents. (Verification of two U.S. patents). By Seidenfaden. n.d. In German. 1.50

5519-5521 PB L 70426 Studies on 2,6-hydroxy-naphthoic acid. By Seidenfaden. n.d. In German. 1.50

5522-5529 PB L 70426 Color salts of the "Echtbraun V" base. By Seidenfaden. n.d. In German. 1.50

5530-5533 PB L 70426 Studies on color salts. By Seidenfaden. n.d In German. 1.50

5534-5537 PB L 70426 Easily soluble diazo-amino compounds from amino azo substances. By Seidenfaden. n.d. 1.50

5538-5540 PB L 70426 Rapidogen developer N for "Rapidechtscharlach 3H". By Seidenfaden. n.d. In German. 1.50

5541-5542 PB L 70426 Clearage of azo dyes insoluble in water. By Seidenfaden. n.d. 1.50

5543-5549 PB L 70426 Identification of naphthol mixtures by means of x-ray diagrams. By Seidenfaden. n.d. In German. 1.50

5550-5554 PB L 70426 Self-coupler. By Seidenfaden. n.d. In German. 1.50

5555-5557 PB L 70426 Arylides of the 2,3 hydroxy naphthoic acid substituted in 1-position. By Seidenfaden. n.d. In German. 1.50

5558-5560 PB L 70426 Substituted amino-anthraquinones as diazo components for "Naphthol AS" dyes. By Seidenfaden. n.d. In German. 1.50

5561-5564 PB L 70426 Substituted α-naphthyl amines as intermediate components in amino azo substances. By Seidenfaden. n.d. In German. 1.50

5565-5568 PB L 70426 Experiments to improve the solubility of diazo salts of amino azo substances by appropriate substitution in the intermediate component. By Seidenfaden. n.d. In German. 1.50

5569-5571 PB L 70426 Observations on the influence of purity of the starting materials for the preparation of color salts. By Seidenfaden. n.d. In German. 1.50

5572-5574 PB L 70426 Observations made in the use of hydrochloric acid of different origin during the production of diazo salts. By Seidenfaden. n.d. In German. 1.50

5575-5576 PB L 70426 A new diazo salt from "Echtbraun V" base. By Seidenfaden. n.d. In German. 1.50

5577-5578 PB L 70426 A new diazo salt from "Echtrot B" base. By Seidenfaden. n.d. In German. 1.50

5579-5581 PB L 70426 A dischargeable black for rayon staple. By Seidenfaden. In German. 1.50

5582-5585 PB L 70426 The influence of the cyano group on the movability of nitro groups in the benzene ring. By Seidenfaden. n.d. In German. 1.50

5586-5587 PB L 70426 Acid-soluble naphthols and their uses. By Seidenfaden. n.d. In German. 1.50

5588-5592 PB L 70426 Preparation of 2,3 hydroxy-naphthoic acid arylides with tertiary bases as solvents according to two Swiss and one Japanese patent. By Seidenfaden. n.d. In German. 1.50

5593-5594 PB L 70426 Production of the 6-cyano-2,3-hydroxy naphthoic acid. By Seidenfaden. n.d. In German. 1.50

5595-5600 PB L 70426 "Naphthol AS" dyes soluble in organic solvents. By Seidenfaden. n.d. In German. 1.50

5601-5603 PB L 70426 The reaction of diazo compounds with iso nitroso acetone. By Seidenfaden. n.d. In German. 1.50

Dyes (contd)

5604 PB L 70426 — A bleaching method customary in British India. By Winterhelter. n.d. In German. 1.50

5605-5608 PB L 70426 — Bordeaux shades fast to peroxide in dyeing "Naphthol AS." By Seidenfaden. n.d. In German. 1.50

5609-5610 PB L 70426 — Studies on the separation of diazo compounds with metal salts. By Seidenfaden. n.d. In German. 1.50

5611-5615 PB L 70426 — Examination of "Variaminblau" base B. By Seidenfaden. n.d. In German. 1.50

5616-5622 PB L 70426 — Studies on amino azo toluenes and their color salts. By Seidenfaden. n.d. In German. 1.50

5623 PB L 70426 — Dyeings with Naphthol AS-BO. By Seidenfaden. 1937. In German. 1.50

5624-5628 PB L 70426 — Improvement of the production process for the "Echtbordo GP" base. By Seidenfaden. n.d. In German. 1.50

5629-5632 PB L 70426 — A new color salt of the "Echtrot B" base. By Seidenfaden. n.d. In German. 1.50

5633-5637 PB L 70426 — Studies on the peroxide bleaching. By Seidenfaden. n.d. In German. 1.50

5638-5642 PB L 70426 — "Naphthol-fein" brands. By Seidenfaden. n.d. In German. 1.50

5643-5648 PB L 70426 — Green dyes on "Naphthol AS." By Seidenfaden. n.d. In German. 1.50

5649-5654 PB L 70426 — "Naphthol AS" dyes soluble in organic solvents. By Fischer I. n.d. In German. 1.50

5655-5663 PB L 70426 — Studies to improve the preparation of the "Variaminblau FG" base. By Seidenfaden. n.d. In German. 1.50

5664-5687 PB L 70426 — Critical survey of the "Rapidecht" dyes and rapidogens of the years of 1925-1936. By Seidenfaden. n.d. In German. 2.50

5688-5693 PB L 70426 — Further experiments on hydroxy-benzene carboxylic arylides as components for ice colors. No author, n.d. In German. 1.50

5694-5702 PB L 70426 — What is the course of reaction in the preparation of 2,3-hydroxy naphthoic arylides according to plant instructions. By Seidenfaden. n.d. In German. 1.50

5703-5728 PB L 70426 — Critical survey of the development of color salts and naphthol bases during the years of 1926-1935. Author and date unknown. In German. 3.00

5729-5731 PB L 70426 — Alkyl sulfuric salts as precipitants for diazo salts. Author and date unknown. In German. 1.50

5732-5735 PB L 70426 — Further studies on amino azo substances for black. Author unknown, n.d. In German. 1.50

5736-5738 PB L 70426 — 2-Naphthol dicarboxylic arylides. Author unknown, n.d. In German. 1.50

5739-5743 PB L 70426 — Preparation of pure I.T.R. base by means of 1,5-naphthalene disulfonic acid. Author unknown, n.d. In German. 1.50

5744-5747 PB L 70426 — Impurities in the crude naphthalene which are capable of being coupled. Author unknown, n.d. In German. 1.50

5748 PB L 70426 — Memorandum on the absorption of chromium by cotton. By Zitscher. 193t. In German. 1.50

5749-5754 PB L 70426 — Further studies for improving the fastness of "Variaminblau" dyeings to washing by hand. Author unknown, n.d. In German. 1.50

5755-5770 PB L 70426 — Critical survey of the development of naphthols during the years of 1925-1935. Author unknown, n.d. In German. 2.00

5771-5789 PB L 70426 — Survey on the development of business done with "Naphthol AS" in 1935. By Hagenboecker. 1936. In German. 2.00

5790-5794 PB L 70426 — Recent studies on acyl acetyl compounds. Author unkown, n.d. In German. 1.50

5795-5798 PB L 70426 — Diphenyl amines negatively substituted in 2-position. Author unknown, n.d. In German. 1.50

5799-5802 PB L 70426 — Derivatives of 1-amino-3-trifluoro-methyl-benzene-5-sulfonic acid as bases for "Naphthol AS". Author unknown, n.d. In German. 1.50

5803-5807 PB L 70426 — Comparative studies on nitrile subetituted bases as diazo components for "Naphthol AS". Author unknown, n.d. In German. 1.50

5808-5810 PB L 70426 — New developments in the production of diazonium-boron-fluorides. Author unkown, n.d. In German. 1.50

5811-5812 PB L 70426 — Experiences with the new Leverkusen pressure boiler used in the production of β-hydroxy naphthoic acid. Author unknown, n.d. In German. 1.50

5813-5822 PB L 70426 — New methods to improve the fastness of "Variaminblau" dyeings to washing by hand. Author unknown, n.d. In German. 1.50

5823-5832 PB L 70426 — Survey on the sales in the field of "Naphthol AS" during the first half of 1935. By Hagenboecker, 1935. In German. 1.50

5833-5838 PB L 70426 — Further research into the amino diphenyl amine series. Author unknown. 1935. In German. 1.50

5839-5842 PB L 70426 — Blue mono azo dyes for "Vulkan" dyeings, fast to bleeding. Author unknown, n.d. In German. 1.50

5843-5845 PB L 70420 — Improving the aspect and powder form of the "Variaminblau" salt. By Prosiegel. 1935. In German. 1.50

5846-5849 PB L 70426 — Purification of naphthols. By Goolsecke. 1935. In German. 1.50

5850-5851 PB L 70426 — B-Hydroxy-naphthoic acid from crude naphtholate Höchst. By Weigmann and Mengel. 1935. In German. 1.50

5852-5854 PB L 70426 — Experiments for producing dischargeable yellow dyes. Author unknown. 1935. In German. 1.50

5855-5859 PB L 70426 — Recent experiences with the standardization of diazo salts. Author unknown, n.d. In German. 1.50

5860-5871 PB L 70426 — New dyes of the 2,3-hydroxy-naphthoic-arylide series for the dyeing of lacquers and "Vulkan". By Fischer. 1935. In German. 1.50

5872-5874 PB L 70426 — New red resists in "Variaminblau". By Zitscher. 1935. In German. 1.50

5875-5880 PB L 70426 — New diphenyl amine derivatives for black. By Zitscher. 1935. In German. 1.50

Dyes (contd)

5881-5883 PB L 70426 — 6-Nitrilo-2,3-hydroxy naphthoic acid. By Zitscher. 1935. In German. 1.50

5884-5887 PB L 70426 — Ice colors from coupling components with several amino groups. By Zitscher. 1935. In German. 1.50

5888-5889 PB L 70426 — 4-Hydroxy diphenyl-3-carboxylic arylides and dyes therefrom. By Zitscher. n.d. In German. 1.50

5890-5907 PB L 70426 — Further studies on "Echtrot" salt KB. Author unknown. 1933. In German. 2.00

5908-5910 PB L 70426 — "Naphthol AS" dyes from 2,5-dimethoxy-4-amino-benzo-nitrile. By Zitscher. n.d. In German. 1.50

5911-5914 PB L 70426 — Dyes from 3,4-xylenol carboxylic arylides. By Zitscher. n.d. In German. 1.50

5915-5921 PB L 70426 — Azo dyes from 2,3-hydroxy naphthoic arylides for the dyeing of rubber. By Fischer. n.d. In German. 1.50

5922-5925 PB L 70426 — Yellow combinations for the purpose of printing. Author unknown, n.d. In German. 1.50

5926-5931 PB L 70426 — On diazonium salts. Author unknown, n.d. In German. 1.50

5932-5935 PB L 70426 — Production of "Naphthol AS". Author unknown, n.d. In German. 1.50

5936-5944 PB L 70426 — Commercial products of the Ciba Co., in the field of "Naphthol AS." Author unknown, n.d. In German. 1.50

5945-5946 PB L 70426 — Arylhydrazine sulfonic acids as resists for "Naphthol AS" combinations. Author unknown, n.d. In German. 1.50

5947-5950 PB L 70426 — Organic alkali binding agents. Author unknown, n.d. In German. 1.50

5951-5954 PB L 70426 — Innovations in the printing with rapidesole blue I.T. Author unknown, n.d. In German. 1.50

5955-5957 PB L 70426 — Diazo sulfonates as components in "Rapidecht" dyes for development by light. Author unknown, n.d. In German. 1.50

5958-5962 PB L 70426 — Diazotation methods for amino diaryl-amines, etc. Author unknown, n.d. In German. 1.50

5963-5964 PB L 70426 — A new, yellow tinted, red, fast to "I". Author unknown, n.d. In German. 1.50

5965-5968 PB L 70426 — Condensations of phloroglucinol with amino aryls. Author unknown, n.d. In German. 1.50

5969-5975 PB L 70426 — Recent studies in the field of "Variamin-blau FG". Author unknown, n.d. In German. 1.50

5976-5978 PB L 70426 — Present production methods for coloring salts based on acetyl sulfanilic acid. Author unknown, n.d. In German. 1.50

5979-5980 PB L 70426 — "Rapidecht" dye from ortho-amino-diphenyl-sulfone. Author unknown. n.d. In German. 1.50

5981-5983 PB L 70426 — Recent studies on 6-phenylamino-2,3-hydroxy naphthoic arylides. Author unknown, n.d. In German. 1.50

5984-5987 PB L 70426 — Diazo salt from 2,6-dichloro-para-phenylene diamine. Author unknown, n.d. In German. 1.50

5988-5989 PB L 70426 — Rapidesole dyes on silk. Author unknown, n.d. In German. 1.50

5990-5994 PB L 70426 — Further studies in the field of "Variaminblau 40664" (4-amino-3-methoxy-diphenyl amine). Author unknown, n.d. 1.50

5995-5997 PB L 70426 — Resists with "Rapidecht" dyes in aniline black. Author unknown, n.d. In German. 1.50

5998-6006 PB L 70426 — "Variaminblau" base 40664. By Zitscher. n.d. In German. 1.50

6007-6080 PB L 70426 — 73 tables of formulas on derivatives of diphenyl amines and other compounds. Author unknown, n.d. In German. 7.50

6081-6418 PB L 70426 — A collection of abstracts of lectures delivered at the Scientific Discussions of the Offenbach plant. By Hagenboecker, etc. 1941. In German. 4.00

Inorganic Chemicals

* PB L 79305. HOYLE, H. A. Chemische Fabriken, Oker and Braunschweig A.G., Oker and Harz. Manufacture of aluminum hydroxide pigment (tonerde-gel) and aluminum sulphate. (BIOS Final Rept 1205, Item 22). n. d. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

Aluminum sulfate is prepared by dissolving hydrate of alumina (65% Al_2O_3) in hot dilute sulfuric acid and concentrated to obtain aluminum sulfate containing 14-15% or 17-18% Al_2O_3 content. For the preparation of alumina gel, aluminum sulfate solutions of varying concentrations are used. Cold solutions of aluminum sulfate are treated with a cold 10% sodium carbonate solution, the white precipitate is filtered off and the washed product (tonerde-gel) is dried in turbo-dryers. The report describes the preparation of both aluminum hydroxide and alumina gel. Raw material requirements and production costs for the two products are given. Properties and uses of silica gel are discussed.

*PB L 79596. MCAULAY, J. Direct synthesis of hydrogen peroxide by electric discharge. (File XXIII-44, Item 22). May-June 1945. 70 p. Price: Microfilm-$2.00 - Photostat-$5.00

No direct synthesis process for the manufacture of hydrogen peroxide was ever worked on a large scale in Germany. However Dr. Johannes Krutzsch of Elektrochemische Werke, Hollriegelskreuth, Munich (E.W.M.) had carried out some research on a 10 Kw and a 100 Kw plant and had plans for a 2000 Kw plant. The latter plant was planned by scaling up the 100 Kw plant. The report describes the work of Dr. Krutzsch. Some of I.G. Leverkusen's research on this subject is also included, together with some correspondence between Leverkusen and E.W.M. Practically all of the information in this report was obtained from Dr. Krutzsch. It was the opinion of German research workers and British investigators that further research would be necessary in order to scale up the process. Drawings, power requirements and energy calculations, and graphs are included.

*PB L 80350. VIGERS, B. E. A. and others. Hydrogen peroxide: Production of 80/85 per cent solutions. (BIOS Final Rept 599, Item 22). Sep 1945. 174 p. Price: Microfilm-$4.00 - Photostat-$12.00

The report deals with the technical details of the process operated by Otto Schickert and Co., at Bad Lauterberg and proposed for the plant under construction at Rhumspringe. The process is based on the original method of A. Pietsch and G. Adolph which was worked out in 1909 and developed at Elektrochemische Werke, Munich. It depends on the electrolysis of a solution of ammonium sulfate containing free sulfuric acid, potassium sulfate and some persulfate equivalent to approxi-

mately 5 grams oxygen per liter. The electrolyzed solution containing persulfate, approx. 11 g.p. l. oxygen, is treated with potassium bisulfate to precipitate potassium persulfate, which is then filtered off by centrifuge and transferred to retorts where it is distilled with steam and H_2SO_4 under vacuum. The vapor is fractionated to give a 30-35% solution of H_2O_2 and the water vapor condensed. The filtrate from the $K_2S_2O_8$ precipitation is returned to the electrolysis baths, while the retort residue from the distillation is centrifuged to recover $KHSO_4$. The 30-35% H_2O_2 is distilled and fractionated to give 65-70% solution which is then concentrated to 80-85% H_2O_2. Appendices consist of translations of reports relating to vapor pressure and hygroscopicity of H_2O, and to the solubility of $K_2S_2O_8$ in electrolytic liquor. Brief abstracts of investigations on purity, concentration and stability of H_2O_2 are also given in appendices, together with a list of research reports relating to H_2O_2. Production details, photographs, graphs, and diagrams illustrate the text.

Chemical Engineering and Equipment

PB L 70250. I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. A collection of reports in the field of chemical engineering. (FIAT Microfilm Reel A 27, Frames 3720-4531) 1937-1945. 811 f. Price: Microfilm-$6.00 - Enlargement Print-$81.50

This FIAT microfilm reel contains chiefly reports on distillation and distillation equipment. 57 individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
3720-3737 PB L 70250	Synthetic tanning agents. By Koch. 1944. In German.	$2.00
3738-3782 PB L 70250	Research on the production of chloroprene. By Jokusch. 1944. In German.	4.50
3783 PB L 70250	"Zaponechtrot CE". By Hoffmann. 1941. In German.	1.50
3784 PB L 70250	Derivatives of thioglycolic acid ("Thio-3-B-Säure", "Blauthiosaure"). By Hoffmann. 1941. In German.	1.50
3785-3786 PB L 70250	"Ortho-Thiosäure" (phenylthioglycol-o-carboxylic acid). By Hoffmann. 1941. In German.	1.50
3787-3789 PB L 70250	"Indanthrenrotviolett RH". By Hoffmann. 1941. In German.	1.50
3790-3807 PB L 70250	"Anthrasols". By Besler and Braunsdorf. 1941. In German.	2.00
3808-3815 PB L 70250	Synthesis of "Indanthrenbrillantorange GR". By Becker. 1941. In German.	1.50
3816-3820 PB L 70250	Navy blue vat dyes. By Schlichemaier. 1941. In German.	1.50
3821-3825 PB L 70250	Green vat dyes of the anthracene series. By Schlegel. 1941. In German.	1.50
3826-3831 PB L 70250	Vat blue fast to chlorine and light. By Wilke. 1941. In German.	1.50
3832 PB L 70250	Use of aluminum chloride containing iron for the production of "Indanthrenkhaki ..". By Klemme. 1941. In German.	1.50
3833 PB L 70250	Cuprous chloride for conversions of "Bromaminsaure" (1-amino-4-bromanthraquinone sulfonic acid). By Kruta. 1941. In German.	1.50
3834-3841 PB L 70250	New possibilities of application of anthracenes. By Kränzlein. 1941. In German.	1.50
3842-3843 PB L 70250	Experiment for the continuous production of "Indanthrengoldgelb GK". By Sieber. 1941. In German.	1.50
3844-3865 PB L 70250	Pressure loss due to filling materials. By Kling. 1938. In German.	2.50
3866-3872 PB L 70250	Material and heat exchange of different kinds of packings under conditions of equal loss of pressure. By Haltmeier. 1938. In German.	1.50
3873-3885 PB L 70250	Experiments with a tubular column (distillation). By Matz. 1938. In German.	1.50
3886-3935 PB L 70250	Distilling columns with flat bubble cap plates. By Sigwart. 1940. In German.	5.00
3936-3943 PB L 70250	Mounting of columns having a diameter of 3 m. By Amann. 1940. In German.	1.50
3944-3956 PB L 70250	Conduction of the liquid, and load limits of bubble caps and tunnel plates with large diameter (use in distillation). By Amann. 1940. In German.	1.50
3957-3969 PB L 70250	Testing the load limits for "Butol" distilling columns. By Amann. 1940. In German.	1.50
3970-4003 PB L 70250	Technique of large-scale continuous distillation in the Schkopau plant. By Amann. 1940. In German.	3.50
4004-4013 PB L 70250	Spacing the bubble caps of exchange plates. By Sigwart. 1940. In German.	1.50
4014-4029 PB L 70250	Applicability of pilot plant rectification results to large scale production. By Sigwart. 1940. In German.	2.00
4030-4049 PB L 70250	Construction and testing of a flat bubble cap plate. By Sigwart. 1940. In German.	2.00
4050-4072 PB L 70250	Heat balances of nitrotoluene columns. By Sigwart. 1938. In German.	2.50
4073-4089 PB L 70250	Increasing the capacity of a distilling column. By Mayer. 1938. In German.	2.00
4090-4102 PB L 70250	On the problem of the pressure loss on bubble cap plates: pressure in front of a slit when a bubble begins to detach itself. By Sigwart. 1938. In German.	1.50
4103-4145 PB L 70250	Calculation of the pressure loss on bubble cap plates. By Sigwart. 1938. In German.	4.50
4146-4162 PB L 70250	Immersion depth and pressure loss on bubble cap plates. By Sigwart. 1938. In German.	2.00
4163-4180 PB L 70250	Separation effect of laboratory columns. By Sigwart. 1940. In German.	2.00
4181-4192 PB L 70250	Calculation aids for designing distilling columns. By Klar. 1944. In German.	1.50
4193-4232 PB L 70250	Present state in the field of distillation and rectification technique. 1942. In German.	4.00
4233-4249 PB L 70250	Measurements regarding Bamag-Kittel column plates. By Hinselhan. 1942. In German.	2.00

Chemical Engineering and Equipment (contd)

4250-4251 PB L 70250 These frame numbers are missing.

4252-4259 PB L 70250 Construction and performance of a Bamag-Kittel "Horden Column". By Trebitz. 1944. In German. 1.50

4260-4264 PB L 70250 Porcelain as construction material for distilling columns. By Einsler. 1940. In German. 1.50

4265-4268 PB L 70250 Trough plates for distilling columns. Measurement of pressure losses and times of stay on trough plates. By Trebitz. 1939. In German. 1.50

4269-4274 PB L 70250 Experiences with "Horden Plates" in distillations at very low pressure. By Himmelhan. 1944. In German. 1.50

4275-4281 PB L 70250 Calculation of bubble cap plates. By Sigwart. 1942. In German. 1.50

4282-4311 PB L 70250 Construction of bubble cap plate columns. By Ammann. 1944. In German. 3.00

4312-4331 PB L 70250 Experiences with flat bubble cap plates. By Sigwart. 1942. In German. 2.00

4332-4355 PB L 70250 Calculation of bubble cap plate columns. By Lüder. 1944. In German. 2.50

4356-4361 PB L 70250 Experiments with rectifying plates of glass. By Meier. 1942. In German. 1.50

4362-4367 PB L 70250 Measurements on Heckmann tunnel plates (distillation). By Himmelhan. 1942. In German. 1.50

4368-4369 PB L 70250 Bubble cap plate columns made of porcelain. 1941. In German. 1.50

4370-4382 PB L 70250 Distribution of the liquid in Raschig ring columns. By Hartmann. 1942. In German. 1.50

4383-4400 PB L 70250 Measurements regarding pressure loss and distribution of the liquid in columns containing small packing materials. By Buche and Abinden. 1942. In German. 2.00

4401-4412 PB L 70250 Experiences with small distilling columns made of glass. By Zbinden. 1943. In German. 1.50

4413-4422 PB L 70250 Studies regarding the similarity of models of ring packed columns. By Matz. 1945. In German. 1.50

4423-4465 PB L 70250 Calculation of the heights of ring packed columns. By Matz. 1944. In German. 4.50

4466-4474 PB L 70250 Influence of the temperature of the binary feeding mixture in rectifying processes. By Matz. 1937. In German. 1.50

4475-4500 PB L 70250 Distilling and rectifying technique. By Hasselblatt. 1938. In German. 3.00

4501 PB L 70250 Adapting the practical construction of columns to the theoretical suppositions by suitable conduction of the liquid and steam. By Eberhardt. 1939. In German. 1.50

4502-5415 PB L 70250 Innovations in the construction of columns. By Hauk. In German. 1.50

4516-4528 PB L 70250 Separating effect of laboratory columns (second part). By Sigwart. 1942. In German. 1.50

4529-4531 PB L 70250 Laboratory columns for fine distillation. By Sigwart. 1942. In German. 1.50

PB L 70250-S. I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. A collection of reports in the field of chemical engineering. (FIAT Microfilm Reel A 27, Frames 3720-4531, abstract cards) 1937-1945. 59 p. Price: Microfilm-$2.00 - Photostat-$4.00
These are short abstracts of the items on reel A 27 (PB 70250) described above. They were prepared by FIAT abstracters in Germany.

* PB L 79598. MARSDEN, L. and others. German chemical industry, with special reference to the design of plant for dyestuffs and intermediates. (BIOS Final Rept 1141, Item 22, 31). Aug 1946. 229 p. Price: Microfilm-$5.00-Photostat-$16.00
Six I. G. Farben locations (Mainkur, Offenbach, Höchst, Uerdingen, Leverkusen, and Ludwigshafen) were visited in August 1946 in order to study the modern German trends, especially the more recent plants erected by I. G for the manufacture of dyestuffs and intermediates. In all, thirty-nine plants were inspected, twenty-six of which were built after 1930, and thirteen before 1930. The report deals only with such aspects of the plants, as in the opinion of the investigators, differ from modern British practice, or are worthy of special note. No attempt has been made to describe any particular plant or building construction, but only to give the reader an adequate picture of the trend of modern German plant design. The study was made difficult owing to the fact that even in a closely coordinated concern like I.G. different works had different fashions and widely different solutions to similar problems, and what was considered good practice in one works was often frowned upon in others. Various drawings and sketches illustrate the text.

PB L 62488. RASCHE and others. Siding of the "Paraflow" plant. (Bericht über den besuch in Wessel am 27 April 1944). May 1944. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is the record of a meeting at which technical, legal, and financial details for the installation of the above plant are discussed. In German.

Miscellaneous Chemicals

*PB L 79304. CRAVEN, E. C. Investigation of pentaerythritol manufacture in Germany. (BIOS Final Rept 1217, Item 22). Jan 1947. 13 p. Price: Microfilm-$1.00 - Photostat-$1.00
The conventional method of manufacture is to condense a mixture of formaldehyde and acetaldehyde in aqueous solution with an alkali. The latter is usually either sodium hydroxide or calcium hydroxide. With the former agent, a product substantially free from salts is obtained by crystallisation, while in the calcium hydroxide process, sulfuric acid, oxalic acid or the like are used to give a solution substantially free from metallic ions before crystallization. The main impurities are dipentaerythritol and ill defined sugary and water-soluble gummy side products. The report describes the production of Paraxol (trade name) at the Paraxol Factory, Schrobenhausen, which uses the lime condensation method. A brief description is given of the process at I. G. Ludwigshafen for making the L. G. or resin grade product by the caustic soda condensation. The production of the better, M grade by a lime condensation is described in CIOS XXVII-84, entitled, "I. G. Farbenindustrie A. G., Ludwigshafen and Oppau, Wehrmacht items", PB 385, v. 1, p. 6, this Bibliography. Some information was also obtained on power and material requirements for pentaerythritol production at Degussa, Frankfurt. D.A.G. Troisdorf was also visited regarding their source of pentaerythritol. A flow-diagram for the production of Paraxol is included.

PB L 82025. GERMANY, ARBEITSSTAB CHEMISCHE FORSCHUNG UND ENTWICKLUNG. Reichsberichte für chemie July 1944. First meeting of the cooperative group on asbestos,

Miscellaneous Chemicals (contd)
Dec 11 and 12, 1942. Jul 1944. 25 p. Price: Microfilm-$1.00 - Photostat-$2.00
Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
102 PB L 52025	Introductory remarks. In German. This page contains remarks on the lectures to be presented.	$1.00
103-116 PB L 52025	SAUERBREY, E. (Reichsamt für Wirtschaftsausbau, Berlin). Occurrence and use of asbestos. In German. This is a survey of the world's asbestos deposits, the chemical and physical properties of asbestos, and the mining and processing of crude asbestos. Prices and German imports of this material as well as its utilization in peacetime are also indicated.	1.00
117-120 PB L 52025	HEYL. (Reichsstelle Kautschuk, Berlin). Stockpiling, distribution, and use of asbestos and its substitutes; products for the various industries and uses. In German. During the war, the following asbestos substitutes were used in Germany: German asbestos powder, slag wool, rock wool, glass wool, steel wool, iron wire, wire screen (the last 3 with addns. such as minerals, synthetic rubber, and synthetic resins), spun glass, glass thread, and synthetic asbestos. The last, though more heat-resistant than natural asbestos, was otherwise far inferior to it.--From Chemical Abstracts.	1.00
121-140 PB L 52025	LÜDKE, WERNER. (Univ. Leipzig, Leipzig, Germany). The scientific basis of the Lüdke asbestos synthesis, and properties of synthetic asbestos. In German. The presence of nascent F in the reaction mixt. is believed to have made possible the synthesis of asbestos in which some of the O is replaced by F. Pptn. of waterglass with Mg salts gave brittle fibers, the mechanical properties of which could not be improved by autoclave treatment. A gel contg. stoichiometric amts. of the components of the asbestos type desired together with a few % of F compds. heated at 300° under pressure for 24 hrs. gave asbestos. In the latest process described, a hot-air blower and atm. pressure were used. Optimum temps. were 900-1000°, and yields were up to 100%. Materials used were MgF_2, kieselguhr, or hydrated silicic acid, NaCl, and H_2O. Carbonates, chlorides, or natural minerals also were usable. F was introduced as fluoride, such as MgF_2, AlF_3, $(NH_4)_2SiF_6$, or Na_2SiF_6. The reaction was quite insensitive to impurities. Increasing the alkali content permitted lowering the temp. With higher F content the pressure could be decreased. Synthetic asbestos made at atm. pressure was fibrous and needle-shaped; it could not be spun. Its fiber length never exceeded 1 cm., and usually was 0.1-0.3 cm. The d., n, lattice dimensions and structure, and pH values were similar to those of natural asbestos. Synthetic asbestos is easier to wet with org. liquids than natural asbestos, and is therefore more suitable for the manuf. of products contg. asbestos and rubber or other org. materials. Synthetic asbestos is not easily wet with water, and thus is not very suitable for making asbestos cement. The reactions leading to the synthesis are influenced by the occurrences at the phase boundaries, by adsorption effects, by the internal structures of the solid phases, by the heats of soln., by the pressure, and by diffusion velocities and paths. H_2O, HF, and SiF_4 may escape as gases during the reaction. Above 500° more HF than SiF_4 escapes. At reaction temps. the off-gas contains hardly any SiF_4, and heating the starting mixt. quickly to the reaction temp. results in a min. loss of SiO_2. Above about 500°, F compds. other than nascent HF are not effective. At atm. pressure, the optimum F content is about 2 mols. HF to 1 mol. SiO_2; in practice this depends on the size of the charge.--From Chemical Abstracts.	2.00
141-147 PB L 52025	SITZ, G. (Anhaltische Studiengesellschaft m. b. H., Bernburg). The technical development of the Lüdke asbestos synthesis. In German. A process was developed in which MgO, silicic acid, alkalies, and certain "mineralizers" such as Cl and F compds. were heated to 700-1000° and made to react with steam. The HCl and HF were condensed, recovered, and reintroduced into the app. in usable form. The plant consisted of a rectangular furnace having about 6 sq. m. cross-sectional area. The gas-tight iron walls were lined with a special refractory. The charge rested on a specially developed ceramic filter plate to insure an even distribution of the hot-air blast. A removable, gas-tight iron cover closed the top of the furnace. All packings were made of synthetic asbestos. The air was preheated to about 250°. Sawdust was mixed with the charge to prevent bunching and to insure slow and even heating which lasted 48 hrs. Air and steam were blown in from the bottom of the furnace. The off-gases were removed through lead pipes on the side of the furnace and passed through a pipe which was about half-full of aq. MgO or $Mg(OH)_2$ soln., so that most of the F was pptd. as MgF_2. The gas and condensate were circulated through a magnesite tower where HF and HCl were neutralized. The dissolved Mg was pptd. with alkali. The slurry was filtered under suction and added to the next charge; drying was not necessary. Starting materials were magnesite, kieselguhr, or waste silicic acid, NaCl and Na_2CO_3, MgF_2, recovered slurry, and either coke or sawdust as fuel. The finished asbestos had the form of a large plate, about 300 mm. thick, which was broken up and shredded. The product was used	1.00

for high-pressure packings, and (mixed with synthetic resins) in brake shoes and Bakelite, in friction tape, elec. insulation, noncombustible airplane coverings, fire- and water-proof paint, and added to asbestos paper and mixed fibers.--From Chemical Abstracts.

148-160
PB L 52025

OSWALD, R., JR. (Emero-Bremsbelag G. m.b.H., Chorn (Sa.)). Steel wool as a substitute in the production of friction layers. In German. 1.00

After a description of the known production methods and materials formerly used research work on and experiments with steel wool are summarized.

161-165
PB L 52025

FREISSER, F. (Torfitwerke G. A., Haseke & Co., Berlin). Asbestos in the asbestos cement industry and wartime substitutes. In German. 1.00

Numerous substitutes for asbestos cement were tried but found to be mostly unsatisfactory. A so-called fiber cement was developed, in which cellulose was used with cement, which had limited structural uses.--From Chemical Abstracts.

166-175
PB L 52025

SCHWAB, K. (Ammoniawerk Merseburg, G.m.b.H., Leuna). Asbestos as insulation and packing. In German. 1.00

Asbestos substitutes and experiences with them at the Leuna plant are discussed. Fiber glass, fireclay, cardboard, or asbestos dild. with up to 10 or 20% textile fibers can be substituted for certain purposes. In some cases, stuffing boxes can be replaced by sheet metal rings. It appears, however, that the substitutes are not asbestos equivs., and that serious damage results from their improper use.--From Chemical Abstracts.

176-181
PB L 52025

KRANNICH, W., (I. G. Farbenindustrie, A. G., Ludwigshafen). Substitutes for asbestos in flanges for steam and water pipes. In German. 1.00

"Polymin"-treated cardboard can be substituted for asbestos as a packing in water and steam pipes up to 5 atm. and 160°. Metallized and otherwise treated cardboards are also of limited use in contact with water, steam, and org. solvents. Substitutes for asbestos in high-pressure packings have not been successful. And all substitutes developed and used thus far are inferior to asbestos.--From Chemical Abstracts.

182-192
PB L 52025

KOCH, PAUL AUGUST (Technische Hochschule, Dresden). The properties of textile fiber glass. In German. 1.00

The author presents definitions of terms used, German standards, and testing methods as applied to glass textile fibers. The results of these tests are illustrated in numerous graphs, pictures, and diagrams.

193-202
PB L 52025

WALZ, FR. Production and spinning of glass fiber. In German. 1.00

Three technical processes for the production of glass fibers, the processing of these fibers into fabrics, and the properties of the spun materials are described.

203
PB L 52025

SCHMIDT, H. (Verein Deutscher Eisenhüttenleute, Düsseldorf). Slag and rock wool as heat resistant material. In German. 1.00

This paper is not contained in the above publication. It was published in "Stahl and Eisen" vol. 63, p. 360, 1943.

204-206
PB L 52025

BEAULIEU MARCONNAY, A. von. Transparent and translucent quartz fiber. In German. 1.00

History, chemical and physical properties of silicic acid glass, and its processing into fibers and their technical utilization are briefly surveyed.

207-215
PB L 52025

HEISS, E. (W. C. Heraeus G.m.b.H., Hanau, Germany). Quartz glass wool. In German. 1.00

The heat cond. λ of quartz glass wool is discussed and compared with that of other insulators, and present and future uses of quartz wool are discussed. Loose quartz wool, bulk density 10 kg./cu. m., has a λ of 0.04. The only superior substance cited is Vitrulan glass wool with $\lambda = 0.029$. In order to have good insulation quality at high temps., quartz wool must be compressed as much as possible (to about 40-50 kg./cu. m. for fibers of 8-12 μ) so that a λ of about 0.425 is possible at 800°. Felted quartz wool has a density of 70-80 kg./cu m. without compression ($\lambda = 0.29$ at 1000°), is well suited for insulation purposes, and can be cut to predetd. patterns. Loose quartz wool can be used to advantage as a filter, or as a sound muffler, and its use as a catalyst carrier is proposed.--From Chemical Abstracts.

216-236
PB L 52025

Discussion. In German. 2.00

The various problems arising during the discussion of the above lectures and the critical remarks and the supplementary suggestions made are summarized.

239-247
PB L 52025

Patent applications. The complete text of the following patent applications is given:

239
PB L 52025

Solvents, swelling agents, gelatinizing agents, and plasticizers. Deutsche Hydrierwerke A. G., Rodleben. D 90175 IV c/39 b, submitted March 5, 1943. In German. 1.00

240-241
PB L 52025

Process for changing the properties of polyvinyl alcohols and their derivatives. A Wacker G.m.b.H., Munich. W 113406 IV c/39 b, submitted June 21, 1943. In German. 1.00

241-242
PB L 52025

Preparation of a polymeric acetal. A. Wacker G.m.b.H., Munich. W 114064 IV c/39 c, submitted Oct 25, 1943. In German. 1.00

242-245
PB L 52025

Procedure for processing iron-containing aluminum. Dürener Metallwerke A. G., Berlin. D 91722 VI a/40 b, submitted Sept 30, 1943. In German. 1.00

245-247
PB L 52025

Procedure for processing iron-containing aluminum. Dürener Metallwerke A. G., Berlin. D 91723 VI a/40 b, submitted Sept 30, 1943. In German. 1.00

PB L 52004. GERMANY, REICHSAMT FÜR WIRTSCHAFTSAUSBAU. First meeting of the cooperative group on the chemistry of aliphatic and cycloaliphatic hydrocarbons, May 24, 1940. May 1940. 102 p. Price: Microfilm-$3.00 - Photostat-$7.00

Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
3 PB L 52004	List of participants. In German. The names of the representatives of various governmental agencies and industrial enterprises who were present at the meeting are listed.	$1.00
4-5 PB L 52004	Introductory remarks. In German. The motives which led to the establishment of this cooperative group, its problems and tasks are outlined.	1.00
5-6 PB L 52004	Instructions. In German. These pages contain 9 administrative rules and instructions for the meetings of the cooperative groups to facilitate research for the "four year plan." These meetings were sponsored by the "Reichsamt für Wirtschaftsausbau Berlin" (Reich office for economic development).	1.00
7-26 PB L 52004	LUTTRINGHAUS, A. (Kaiser-Wilhelm Inst., Berlin). Chemistry of the aliphatic and alicyclic hydrocarbons. In German. In order to interest German scientists in research into aliphatic chemistry, a bibliography of 171 items (chiefly American and Russian sources) is surveyed under the following subheadings: (1) Analysis, (2) the cracking process, (3) isomerization, (4) aromatization, (5) synthesis of hydrocarbons from olefins, (6) the peroxide effect, (7) the substitution of paraffins, and (8) the utilization of lower olefins.	2.00
27-33 PB L 52004	JANNEK, J. (I. G. Farbenindustrie, A. G., Oppau.) Synthesis and transformation of simple hydrocarbons. In German. After reviewing the chem. transformations possible among aliphatic hydrocarbons contg. 8 or fewer C atoms, optimal conditions for the performance of the following reactions are discussed: Cracking, dehydrogenation, hydrogenation of olefins, isomerization, cyclization and aromatization, polymerization, and alkylation. Relative octane numbers as motor fuels are given.	1.00
35-46 PB L 52004	BÄHR, D. (I. G. Farbenindustrie A. G., Ludwigshafen). Recent studies on alkylation. In German. Recent work on the alkylation of olefins with isoparaffins in the presence of an acidic catalyst is reviewed. The proportion of reactants and of catalyst, acid concn., temp., and duration of reaction are discussed. The reaction conditions for the alkylation of isobutane with various olefins are given with reference to specific data, given in tabular form. 3 diagrammatic flow sheets.--From Chemical Abstracts.	1.00
47-48 PB L 52004	BRÜCKNER, H. (Gasinstitut, Technische Hochschule, Karlsruhe). Alkylation and dealkylation of benzenoid hydrocarbons. In German. A short summary of the reactions involved.--From Chemical Abstracts.	1.00
49-57 PB L 52004	KOCH, H. (Kaiser Wilhelm Institute für Kohlenforschung, Mülheim-Ruhr) Alkylation of aliphatic hydrocarbons, particularly with regard to "Kogasin." In German. By alkylation in the presence of anhyd. HF the products of "Kogasin" (heavy oil from the Fischer-Tropsch process) synthesis can be converted into high-antiknock fuels similar to isooctane. The HF catalyst gives few side reactions, has a long life, and when activated by BF_3 can also be used for the conversion of ethylene or ethylenic mixts. Fractions of "Kogasin" not elsewhere useful are either isomerized and cleaved with $AlCl_3$ or pyrolyzed to give an olefin mixt. suitable for the alkylation reaction.--From Chemical Abstracts.	1.00
59-67 PB L 52004	GROLL, H. (Rhenania-Ossag, Hamburg). Glycerol syntheses. In German. A review of the processes used and products obtained from the chlorination and hydrolysis of the chlorinated products of propylene, butylene, and isobutylene. Glycerol may be obtained from allyl chloride or allyl alc. by conversion to the dichlorohydrin and chlorohydrin, resp., followed by hydrolysis.--From Chemical Abstracts.	1.00
69-74 PB L 52004	HEROLD, P. (I. G. Farbenindustrie, A. G., Leuna). Sulfochlorination of saturated hydrocarbons. In German. The photochem. reaction of a mixt of SO_2 and Cl with satd. hydrocarbons results in the formation of alkyl sulfonyl chlorides. The raw material should be free of unsatd. or O-contg. compds. The mechanism of the reaction and some relations of structure and mol. wt. with reactivity are discussed.--From Chemical Abstracts.	1.00
75-86 PB L 52004	RIECHE, A. (I. G. Farbenindustrie, A. G., Farbenfabrik Wolfen). Significance of organic peroxides in the chemistry of the aliphatic and cycloaliphatic hydrocarbons. In German. The oxidation of aldehydes, ethers, olefins, and paraffins by means of oxygen, the action of peroxides in the polymerization of olefins, and the peroxide effect in addition reactions to olefins are discussed. --From Chemical Abstracts.	1.00
87-99 PB L 52004	SCHUMACHER, H. J. (Universität Frankfurt am Main). Photochemical chlorination of aliphatic compounds. In German. In the photochem. halogenation of aliphatic compds. mols. such as Cl_2 or Br_2 play no significant part. Oxygen inhibits the halogenation reactions by preferential reaction with intermediate free radicals with the formation of various oxidation products. The addn. of halogens to double and triple bonds and the substitution of halogens for H in aliphatic compds. are explained by the initial activation of halogen according to the scheme $Cl_2 + h\nu = Cl + Cl$. These activated halogen atoms then	1.00

react further with the aliphatic compds. A no. of complete reaction schemes and a table of the quanta of energy required for certain typical reactions are given.--From Chemical Abstracts.

101-109 PB L 52004 — Discussion. In German. The various problems arising during the discussion of the above lectures and the critical remarks and supplementary suggestions made are summarized. — 1.00

PB L 52014. GERMANY, REICHSAMT FÜR WIRTSCHAFTSAUSBAU. Chemische berichte, May 1942. May 1942. 52 p. Price: Microfilm-$2.00 - Photostat-$4.00

Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
352 PB L 52014	Remarks on the "Chemische Berichte" and the cooperative groups. In German. These are administrative notes and instructions without any technical importance.	$1.00
353-382 PB L 52014	JOHN, W., and others. (Univ. Göttingen, Ger.) The colorimetric analysis of liquid fuels. In German.	2.00

Solvatochromism of 2-hydroxyphenazine derivs. was investigated for its analytical possibilities. 1,2,4-Trimethyl-3-hydroxyphenazine (I) exists in 2 stable tautomeric forms: a light-yellow (II) and a dark-purple (III) tautochrome, and the equil. between these forms depends on the solvent. Shifts in resonance equil., particularly an amphoteric ion (IV), contribute to characteristic color changes. Detns. were made by adding a standard soln. of (I) in benzyl alc. to a large no. of solvents and by detg. the color with Lange's photoelec. colorimeter, or by detg. the translucency with a Zeiss-Pulfrich photometer with appropriate filters. Group differences are very marked, e.g. yellow: paraffins and naphthenes about 50, olefins 30, aromatic compds. 15; it is possible to det. aromatic compds. in complicated mixts. to within 1-2%. Structural differences within the same class are noticeable but too small for use. The translucencies are nearly additive for nonpolar substances, but deviate for polar substances. Alc.-benzene mixts. have a min. at about 60% alc.; the detn. of alc. in hydrocarbons to within 1% in mixts. up to 20% alc. is easy and rapid. Pseudocumoquinone was heated in excess $Ac_2O(H_2SO_4)$ to give 1,2,4-trimethyl-3,5,6-triacetoxybenzene, m. 152°, which heated in $MeOH-H_2SO_4$ and oxidized with $AgNO_3$ led to trimethylhydroxyquinone, m. 95° (V). Reduction of (V) with Zn dust in $MeOH-H_2SO_4$ gave trimethylhydroxyhydroquinone, m. 165°. (III) is obtained by heating (V) with o-diaminobenzene in AcOH and dilg. with water; it m. 213°. The sulfate decomps. above 330°, hydrochloride m. 240-6°. (II) can be obtained by extg. the aq. reaction liquor of (III) with ether, and is then always mixed with (III). It is obtained almost pure by dissolving (III) in EtOAc from which (II) crystallizes in soft yellow needles. At 135° (II) changes suddenly to (III). Both tautomers have the same color in soln. and (III) is always recovered upon pptn. Methylation of (I) in alc. soln. with MeI gives a yellow methyl ether, m. 120°. Purple N-methylhydroxytrimethylphenazine (VI) is formed simultaneously in very small quantity, and can be isolated chromatographically, m. 174°. (VI) was also prepd. directly by heating (I) with N-methyl-o-diaminobenzene. Reaction of (III) with Ac_2O in the presence of $ZnCl_2$ gave a light-yellow acetate of (I), m. 194°. 1,3,4,8-Tetramethyl-2-hydroxyphenazine was prepd. by heating equimol. parts of (V) and diaminotoluene in 5 parts AcOH. The purple form m. 206°. The yellow form is obtained from EtOAc and is stable up to almost 206°. 1,3,4,6,8,9-Hexamethyl-2-hydroxyphenazine, m. 198° was prepd. by nitration and reduction of pseudocumidine, and by condensing the resulting diamine with (V). The color differences in various solvents are not sufficiently pronounced. 1,3,4,7,8-Pentamethyl-2-hydroxphenazine, m. 203°, was prepd. from sym-o-xylylenediamine (VII) and (V); it is a good tautochrome. 1,3,4,8,9-Pentamethyl-2-hydroxyphenazine, m. 215°, was obtained by condensation of vic-o-xylylenediamine with (V). 3-Methyl-2-hydroxyphenazine, m. 263° (decompn.), a poor tautochrome, was prepd. from hydroxytoluquinone (VIII) and o-diaminobenzene. Condensation of (VII) and (VIII) gave 3,7,8-trimethyl-2-hydroxyphenazine, which is almost insol. in org. solvents. By bringing trihydroxytoluene into contact with Br in a mortar a product, m. 197°, was obtained which is identical with a described dibromo-2(5 or 8)-hydroxy-5-methylbenzoquinone, where the position of the OH was uncertain. The present synthesis proves this substance to be 3,6-dibromo-2-hydroxy-5-methyl-1,4-benzoquinone (IX). (IX) reacts avidly with o-diaminobenzene to 1,4-dibromo-3-methyl-2-hydroxyphenazine, m. 205° decompn. Both the yellow and purple crystals of 3,8-dimethyl-1,4-dibromo-2-hydroxyphenazine, m. 200° decompn., are obtained from (IX), and o-toluylenediamine. 3,4-Benzo-2-hydroxy-1-methylphenazine was obtained by condensing o-diaminobenzene with 2-methyl-3-hydroxynaphthoquinone. It is sol. in all solvents with red color.--From Chemical Abstracts.

383-402 PB L 52014 — SUIDA, H. and HAURA, J. (Tech. Hochschule, Vienna, Austria). Synthetic aviation lubricants from α-olefins C_6--C_{18}. In German. — 2.00

1-Hexene (I), 1-dodecene (II), 1-hexadecene (III), 1-octadecene (IV), and an olefin mixt. obtained by dehydrogenation of paraffin wax (V) were polymerized with 3% $AlCl_3$ for 50-70 hrs. at less than 20°, with CCl_4 as activator. After removal of the catalyst the products were topped at a vacuum of 12 mm. Hg up to 200° overhead. The 1st concentrate was fractionated in a 3-stage molecular vaporizer at 0.001 mm. Hg into a concentrate viscosity 20-5° E_{50} and 3 side streams. Raffinates of 18-22° E_{50} (aviation lubricants) were then

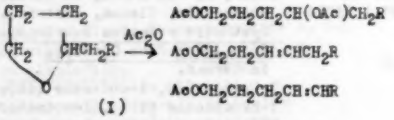
obtained by clay adsorption, flash above 310°, sapon. no. 0, neutralization no. 0.01 max., no ash, no asphalt, pour point - 13° to -18°, Conradson test 0.31-0.63. Oils from (II), (III), (IV) had viscosity indexes of 122-126, from (I) 86.8, from (V) 117, and a mixed polymer ((I)/(IV) = 1) 105. The corresponding unrefined distillates, e.g. winter oil of 5-8° E_{50}, had still better properties: flash 250°, viscosity index 136, pour point -15°, Conradson values below 0.05. The influence of the residual double bond is different for distillates and concentrates. While the former show good aging properties (British Air Ministry Test 12 hrs. 200°; increase in Conradson value less than 1%, viscosity less than 100%), the latter are not satisfactory unless hydrogenated; this does not affect other properties. The prepn. of all olefins was studied. Silica gel at 290° was the best catalyst for the prepn. of (I) from 1-hexanol, yield 21.3%. Phosphoric acid on active carbon gave the best yields of (II), (III), (IV) from their primary alcs., but decompn. of the corresponding palmitates was found preferable to catalytic dehydration. Other catalysts which gave lower yields were Al_2O_3, Ce_2O_3, ThO_2. Paraffin wax was dehydrogenated over Ce_2O_3 at 535° and 15 mm. Hg pressure, av. mol. wt. of the product 242.--From Chemical Abstracts.

PB L 52020. GERMANY, REICHSAMT FÜR WIRTSCHAFTSAUSBAU. Chemische Berichte, Nov 1942. Nov 1942. 67 p. Price: Microfilm-$2.00 - Photostat-$5.00

This issue consists of 4 original contributed papers. Abstracts of the papers follow. The papers will be available in photostat form. Please include PB and page numbers when ordering individual items. In German.

Pages	Title	Price
1043-1055 PB L 52020	HINZ, A. and others. (Tech. Hochschule, Berlin). Cleavage of hydrogenated furan condensation products. In German.	$1.00

Tetrahydrofuran and its derivs. show the typical acid-sensitivity of alkylene oxides; the furan ring is easily opened by H halide, acid halide, or acid anhydride (cf. Smorgonski and Goldfarb, C.A. 35, 4011[5]; Paul, C. A. 33, 4192[5]; 36, 6140[9]), and derivs. of butanediol are formed.



(I)

In the reaction of Ac_2O with alkyltetrahydrofurans, if the group R contains a polar substitutent, the cleavage is difficult and only diacetates of substituted 1,4-butylene glycols are obtained. If the substituent is only weakly polar or is sufficiently removed from the furan ring, the cleavage may proceed readily and olefins which can be easily hydrogenated may be formed. Such compds. have tech. as well as scientific interest. The cleavage of (I) by Ac_2O and $ZnCl_2$, and in 1 case by PCl_5, was investigated, R being chosen from among CH_2CO_2Et, $CHClCO_2H$, $CH_2CH(OH)Me$, Pr, $(CH_2)_3CH(OH)Me$, and $(CH_2)_3CO_2Et$. Et tetrahydro-2-furanpropionate (II) (100 g.), 180 g. Ac_2O, and a few crystals of $ZnCl_2$ were heated 4 hrs. in an autoclave at 210-215°, the excess Ac_2O was removed, and the residue vacuum-distd. The product, $AcO(CH_2)_3CH(OAc)(CH_2)_2CO_2Et$, b_{10} 178-80° (yield 80%), refluxed with alc. HCl did not give the free acid, but the lactone, $HO(CH_2)_3\underline{CH.(CH_2)_2CO.O}$, b_{10} 185° (yield 96%). $SOCl_2$ (85 g.), added dropwise to 86 g. II and stirred 2 hrs. at 70°, gave $ClCH_2CH_2CH_2\underline{CH.CH_2.CH_2.CO.O}$ (III), b_{10} 160° (yield 92%). (III) was also obtained by leading HCl through (II) during 24 hrs. refluxing. Cl (40 g.) was led into 100 g. tetrahydrofurfurylmalonic acid ((I), R = $CH(CO_2H)_2$) in 200 cc. dry Et_2O 5 hrs. at -2° to -6° to give (tetrahydrofurfuryl) chloromalonic acid (IV), m. 127° (evolution of CO_2), rhombic leaflets (yield 89-94%), almost insol. in PhMe and C_6H_6, easily sol. in H_2O, EtOAc, and boiling $CHCl_3$. (IV), heated at 127-40° 0.5 hr., gave a colorless, viscous liquid, b_9 170-2°, the major portion of which crystd. on long standing as β-(tetrahydro-2-furyl)-α-chloropropionic acid (V), dodecahedric plates, m. 69-70°. The remainder of the distillate had the same b.p. and compn. but could not be made to crystallize. PCl_5 (54 g.) added to 42.5 g. (V) in an ice bath gave 2 fractions, the acid chloride of (V), b_8 104° (amide, m. 106-8°; anilide, m. 94-5°), and $Cl(CH_2)_3\underline{CH.CH_2.CHCl.CO.O}$ (VI), a colorless, oily liquid with no appreciable odor, b_{10} 185°, b_5 169°. (VI) was converted to $Cl(CH_2)_3$ $\underline{CH.CH_2.CH(OH).CO.O}$, b_{10} 170-1°, by 10% NaOH and to $HO(CH_2)_3$ $\underline{CH.CH_2.CH(OH).CO.O}$, b_{10} 176-7°, by Ag_2O. 3-(Tetrahydro-2-furyl) propyl alc. ((I), R = CH_2CH_2OH) (130 g.), 400 g. Ac_2O, 0.1 g. $ZnCl_2$, 4 hrs. in an autoclave at 240°, gave $AcO(CH_2)_3$ $CH(OAc)(CH_2)_3$ OAc, b_{10} 148-9° (yield 12%), and $AcO(CH_2)_2CH{:}CH(CH_2)_3OAc$ (VII), b_{10} 140-2° (80%). The Et_2O ext. of the pasty mass resulting from heating 21.4 g. (VII) and 18 g. $Ba(OH)_2$ 5 hrs. at 106° gave $HO(CH_2)_2CH{:}CH(CH_2)_3OH$, b_{10} 147-8°, which was hydrogenated to $HO(CH_2)_7OH$. The bis-(Phenylurethan) of the satd. dibasic alc. showed a transition point at 129° and m. 137°. 2-Hydroxy-4-(tetrahydro-2-furyl) butane (VIII) ((I), R = $CH_2CH(OH)Me$) (150 g.), heated with 318 g. Ac_2O and 2 g. $ZnCl_2$ 5 hrs. in an autoclave at 230°, gave 1,7-octenediol diacetate (IX), b_{10} 143°, and $AcO(CH_2)_3$ $CH(OAc)(CH_2)_2CH(OAc)Me$, b_{13} 162°. (IX) (84 g.) in 45 cc. EtOH, hydrogenated in the presence of 4 g. Raney Ni 4 hrs. at 130° in a shaking autoclave, gave 60 g. $AcO(CH_2)_6CH(OAc)Me$, n_{21} 1.4374, b_{13} 139-42°, sapond. with 10% NaOH to HO $(CH_2)_6CH(OH)Me$, a colorless viscous liquid, b_{13} 146-7° (74%). (VIII) (35 cc.), slowly heated to 170° with 40 cc. of 40% H_2SO_4, gave 4-(tetrahydro-2-furyl)-1-butene ((I), R = $CH_2CH{:}CH_2$), b_{12} 48-53° (40%), hydrogenated to 1-(tetrahydro-2-furyl)butane (X), b_{12} 49-55° (98%). (X) (30 g.), heated with 100 g. Ac_2O and a small

amt. of $ZnCl_2$ 4 hrs. at 220°, gave $AcO(CH_2)_3CH(OAc)$-Bu, n_{12} 1.4304, b_{12} 127-9°. The products from the action of $ZnCl_2$ and Ac_2O on 2-hydroxy-6-(tetrahydro-2-furyl)-hexane ((I), R = $CH_2CH_2CH_2CH(OH)Me$) were 1,4,9-decanetriol triacetate (XII), b_{10} 196-8°, 1,9-decanediol diacetate (XII), b_{11} 156-63°, and a small amt. of decanediol acetate (XIII), b_{12} 112-18°. The relative yields of each depended upon the time, temp., and amt. of $ZnCl_2$ (XI), the primary product, was deacetylated to (XII) and (XIII), losing most readily the innermost AcO group. The yield of (XII) was 85% with large amts. of $ZnCl_2$. (XII) (70 g.) in 70 cc. EtOH was hydrogenated in 3 hrs. at 180-6° to $AcO(CH_2)_8CH(OAc)Me$, b_{11} 158-64° (97%), sapond. to $HO(CH_2)_8CH(OH)Me$, a colorless viscous oil, b_{10} 162-5°, which solidified to a wax, m. 30-1° (96.5%). (XIII) (60 g.), refluxed 4 hrs. with 350 g. MeOH contg. 2% HCl, gave decadien-1-ol, b_{11} 111-13° (41 g.). 1,9-Bis(tetrahydro-2-furyl)-5-hydroxynonane (56 g.), 150 g. Ac_2O, 0.5 g. $ZnCl_2$, 5 hrs. at 230°, gave heptadecatriene-1, 17-diol diacetate (XIV), n_{21} 1.4724, b_{10} 210-15° (45.7%), and heptadecadiene-1,9,17-triol triacetate, an oily colorless liquid, n_{21} 1.4660, b_7 237-43° (44.5%). (XIV) (80 g.) in 70 cc. EtOH was hydrogenated in 2.5 hrs. at 145° to $AcO(CH_2)_{17}OAc$, b_{10} 229-34°, solidifying to a wax, m. 39-41°. (XIV) (175 g.), refluxed 4 hrs. with 1 l. 2% alc. HCl, gave heptadecatriene-1,17-diol, a bright yellow viscous oil, n_{21} 1.4929, b_{11} 204-10° (86%), which was hydrogenated to $HO(CH_2)_{17}OH$, a colorless oil, b_{10} 215-20°, which immediately crystd., m. 96.5°. $HO(CH_2)_{17}OH$ was also obtained by sapon. of $AcO(CH_2)_{17}OAc$. Et tetrahydro-2-furanvalerate ((I), R = $CH_2CH_2CH_2CO_2Et$) (100 g.), 150 g. Ac_2O, 1 g. $ZnCl_2$, 4 hrs. at 210-20° gave Et 9-acetoxynonenoate, b_{10} 163-5° (65%), sapond. with $Ba(OH)_2$ to Et 9-hydroxynonenoate, b_{11} 168°. 2-(Tetrahydro-2-furyl)-1,3-dioxolane (50 g.), refluxed 6 hrs. at 80° with 100 g. Ac_2O and a small amt. of $ZnCl_2$, gave 77 g. $O.CH_2.CH_2.CH_2.CHCH(OAc)\text{-}OCH_2CH_2OAc$ (XV), b_{10} 156-8°, a colorless, somewhat oily liquid. (XV) appeared to be easily converted to tetrahydrofurfural and $HOCH_2CH_2OH$, and $O.CH_2.CH_2.CH_2.CHCH(OH)OCH_2CH_2OH$ could not be isolated.--From Chemical Abstracts.

1066-1062 PB L 52020 KORTÜM, G. and KORTÜM-SEILER, M. (Univ. Tübingen). A new photometric method for the determination of phosphorus. In German. 1.00

The decrease of a ferric salicylate complex (max. light absorption at about 550 mμ) in the presence of phosphate ion is the basis of a spectrophotometric method for P in soils and nonferrous metals. Oxlates, glycolates, acetates, lactates, phthalates, formates, sulfates, citrates, and arsenates should be absent. A standardization curve can be prepd. by using 2-50 cc. of 0.002 M KH_2PO_4, 50 cc. H_2O, 3 drops of 0.025 N Na β-dinitrophenolate, dil. HCl until the color is pale yellow, 25 cc 0.002 N Na salicylate, 25 cc. of 0.002 M $FeCl_3$ in 0.1 N HCl, and dilg. to 250 cc.--From Chemical Abstracts.

1063-1072 PB L 52020 EIGENBERGER, E. (Deutsche tech. Hochschule, Prague). Ketolic oxyns. II. Rust prevention by linseed oil-metal oxide films. In German. 1.00

In contrast to the older literature (Bauer, C.A. 23, 5051), the term "Oxyns" is given to all autoxidation products of drying oils intermediate between liquid and gelatinous products. Many Pb, Zn, and Fe compds. of ketolic linseed oil oxyns either as a clear varnish or in mixts. with and equiv. amt. of metal oxides have rust-preventive action analogous to that of the usual linseed oil-red lead mixts. The Pb content is not alone an assurance of rust prevention. A linseed oil-red lead mixt. (15:85, resp.) (76.7% Pb); a linseed oil autoxidized in the cold, Al no. 3.0, contg. Pb butylate equiv. to the Al no. (18.4%Pb); the same linseed oil with 1/2 as much Pb butylate (10.1% Pb); a linseed oil autoxidized in the cold, Al no. 3.9, which had been treated with Ac_2O (0% Pb); a linseed oil autoxidized in the cold, Al no. 4.6, contg. equiv. ZnO (10.0% Zn); and the same linseed oil contg. equiv. $Fe(OH)_3$ (9.8% Fe), all were effective in preventing rust. A linseed oil autoxidized in the cold with PbO (9.5%Pb), a linolenic acid with an equiv. of Pb butylate (34.0% Pb), and a laurcin with an equiv. of Pb butylate (36.2% Pb) exerted little or no rust prevention. Tung oil-lead oxide paints did not prevent rusting. Castor oil was effective only in special pigment mixts. and takes an intermediate position between linseed oil and tung oil, apparently because it contains 9,12-linoleic acid as well as the isomeric 9,11-dienoic acid. Al compds. of effective ketolic oxyns showed no rust prevention.--From Chemical Abstracts.

1073-1108 PB L 52020 FLAIG, WOLFGANG. New transformations of crotonaldehyde. In German. 3.00

Derivs. of the enol form of $MeCH{:}CHCHO$ were made by the dealkoxylation of acetals and condensation of the alkoxybutadiene with maleic anhydride and phthalic anhydride. $MeCH{:}CHCHO$ (900 cc) was added dropwise with stirring in 1.5 hrs. at not over -5° to 300 g. fused Na_2SO_4 in 1800 cc. abs. EtOH satd. with dry HCl. The lower layer was sepd., dried over Na_2SO_4, and distd., b_{11} 72-4°. Abs. EtOH (1/3 vol.) was added to the distillate, the mixt. was cooled in an ice bath, 150 g. $Ca(OH)_2$ added immediately, and 200-300 cc. Et_2O at room temp. $MeCHClCH_2CH(OEt)_2$, b_{12} 71°, obtained from the filtrate (yield 37%), refluxed 1 hr. with pulverized KOH in a Cu flask, gave 80% $MeCH{:}CHCH(OEt)_2$ (I), b_{17} 49°. Abs. EtOH (3000g), 75 g. conc. H_2SO_4, and 1500 g. $MeCH{:}CHCHO$ was stirred 16 hrs. at 50° under a Co_2 atm. NaOH (61 g.) in as little H_2O as possible was added, and a mixt. of EtOH, $MeCH{:}CHCHO$, and H_2O was distd. off at 40° and 90 mm. The filtrate was fractionated to yield 200 g. $MeCH(OEt)CH_2CHO$, b_{14} 40-70°, and 1300-1500 g. $MeCH(OEt)CH_2CH(OEt)_2$ (II), b_{14} 80-1°. A condensation product (300 g.) of $MeCH{:}CHCHO$ remained as a still residue. (II), further purified by refluxing and stirring with powd. KOH in a Cu flask, had d_4^{20} 0.8750, n^{20} 1.40429, n^{20} 1.41105, n^{20} 1.41455, n_D^{20} 1.40820, and could be kept unchanged by adding a few drops of piperidine. A conc. aq. soln. contg. 40 g. NaOH was added at

not over 20° to 1000 g. MeCH:CHCHO, 50 g. conod. H_2SO_4, and 1400 g. MeOH, and the filtrate was distd. at atm. pressure to remove 1000 g. of a mixt. of MeCH:CHCHO, MeOH, and MeCH(OMe)CH_2CHO. Distn. of the upper layer of the remaining liquid gave 900-950 g. crude MeCH(OMe)CH_2CH(OMe)$_2$, which after purification by shaking with aq. $NaHSO_3$, washing with dil. NaOH, H_2O, drying over KOH, and distn., b. 44°, d_4^{20} 0.9180, n_{α}^{20} 1.40073, n_{β}^{20} 1.40735, n_{γ}^{20} 1.41083, n_D^{20} 1.40268. Catalysts for dealkoxylation of acetals were made from $NaH_2PO_4.2H_2O$, $Al_2(SO_4)_3.18H_2O$, and $MgSO_4.2H_2O$ by heating them until they had dissolved in their water of hydration, then until they had a doughlike consistency, passing them through a 2-mm. sieve to obtain granules, and heating at 350° and 15 mm. to a completely remove the H_2O. Catalysts contg. silicates were made by admixt. with 40°Bé. water glass and drying 2.5 hrs. at 200°. Activated silica gels were prepd. by treating 45 g. of silica gel with 20 cc. of a 3% soln. of $Ni(NO_3)_2$, $AlCl_3$, $(NH_4)_2MoO_4$, $TiCl_3$, or $MnSO_4$ and drying in an oven 1° hr. at 200-50°. A small-scale app. for the conversion of trialkoxybutanes to alkoxybutadiene consisted of a 50-100 cc. heated Claisen flask equipped with dropping funnel, N inlet, manometer, and side arm delivering into an electrically heated tube 2.3 cm. in diam. packed for 30 cm. of its length with the catalytic agent. In 1 hr., 100 g. starting material could be swept through at 250-350° at a pressure difference of 15-20 mm. and condensed in receivers cooled in dry ice-Me_2CO and in liquid air. A larger-scale app. somewhat similar in design permitted the conversion of 1 kg. or more of the starting material at the same rate. The alkoxybutadiene was recovered by washing the contents of the cooled receivers, drying over KOH, and distg. at 40 mm. Variation in catalyst (g.), temp., and time (hrs.) gave the following yields (%) of CH_2:CHCH:CHOEt (III) from 100 g.(I) and (II), resp.: (I), 60 NaH_2PO_4, 350°, 1.5, 81; 50 $Al_2(SO_4)_3$, 300-50°, 45, 52; 60 $MgSO_4$, 350-70°, 1.5, 59; 35 B_2O_3, 350°, 1.45. (II), 50 $Al_2(SO_4)_3$, 350°, 1.5, 3.0; 62 B_2O_3-P_2O_5, 250°, 1.1, 56; 66 NaH_2PO_4, 320°, 2.5, 65; 69 SiO_2 gel, 200°, 1.3, 56; 48 $MgHPO_4$-water glass, 350°, 1.1, 74; 35 $AlPO_4$-water glass, 300°, 1.0, 82; 30 fuller's earth, 300°, 0.6, 37; 10 Al_2O_3, 350°, 1.6, 69; 34 Al_2O_3-water glass, 350°, 1.0, 35; 25 C, 350°, 1.6, 72. MeCH:CHCH(OMe)$_2$ (100 g.) passed over NaH_2PO_4 in 40 min. at 350° and 18 mm. gave 5 g. forerun, b_{87} 29°, 24 g. CH_2:CHCH:CHOMe, b_{87} 44-6° (58%), 18 g. intermediate fraction b_{87} 48-55°, 27.5 g. MeCH:CHCH(OMe)$_2$ b_{87} 57°, 2 g. still residue. Approx. the same yield of CH_2:CHCH:CHOMe was obtained from MeCH(OMe)CH_2CH(OMe)$_2$ with an activated SiO_2 gel. (II) (100 g.) and 50 g. Al_2O_3 gave 3.7 g. forerun, b_{13} 53°, 5.1 g MeCH(OEt)CH:CHOEt, b_{13} 60-62°, 26.6 g. (II), b_{13} 78°, and a small amt. of a lower fraction, b. 74-6°. No semicarbazone was obtained from MeCH(OEt)CH:CHOEt but only a p-nitrophenylhydrazone, m. 172-3°, apparently identical with the p-nitrophenylhydrazone of MeCH(OEt)CH_2CHO, m. 172-3°, since a mixed m.p. gave no depression and the mixed m.p. of the p-nitrophenylhydrazone of MeCH:CHCHO (m. 183-4°) and the p-nitrophenylhydrazone of MeCH(OEt)CH:CHOEt was 165-70°. The addn. of 0.1 mole Br during 20 min., with agitation, to 0.1 more (III) in 75 cc. abs. Et_2O caused the di-Br compd. to crystallize from soln. Na (0.1 g. atom) in 50 cc. abs. Et_2O was added, the NaBr, EtOH, and Et_2O were removed, and the residue distd. to give 6 g. CH_2BrCH:CHCH(OEt)$_2$ $b_{0.3}$ 74-5°, d_4^{20} 1.2424, n_{α}^{20} 1.46997, n_{β}^{20} 1.48159, n_{γ}^{20} 1.48899, n_D^{20} 1.47309, a colorless lachrymatory liquid when freshly distd., stable for some days when stored at -20°, rapidly decompg. at room temp. in air. On heating with K_2CO_3, 1 mole EtOH was evolved and the product crystd. at -4°. Br (0.2 mole) was added to 0.1 mole (III) in 100 cc. Et_2O during 0.75 hr. at -70°, the Et_2O was removed, the residue, needles m. above 30°, was again dissolved in Et_2O, treated with 0.1 g.-atom Na in 50 cc EtOH, and allowed to stand 20 hrs. at room temp. The NaBr, Et_2O, and EtOH were removed, and somewhat impure $CH_2BrCHBrCHBrCH(OEt)_2$, b. 92-3° under very low pressure, was obtained. Bromosuccinimide (0.5 mole) was added in a finely powd. and carefully dried state to a vigorously stirred solution of 0.1 mole (III) in 100 cc. abs. EtOH during 20-30 min. at 0-5°. After stirring 2 hrs. at room temp. the succinimide, EtOH, and Et_2O were removed and by fractionation 64% CH_2BrCH:CHCH(OEt)$_2$, $b_{0.001}$ 47-51°, d_4^{20} 1.2378, n_{α}^{20} 1.46884, n_{β}^{20} 1.48064, n_{γ}^{20} 1.48743, n_D^{20} 1.47237, was obtained. CH_2BrCH:CHCH(OEt)$_2$ (42 g.) was slowly added to 12 g. KOH in 50 cc MeOH at 0°. The mixt. was warmed 15 min. on the water bath, the KBr filtered off, and 5 vols. H_2O added. The sepd. ethoxy acetal, washed with H_2O, dried over KOH, and distd., gave 65% $EtOCH_2CH$:CHCH(OEt)$_2$, b. 52°, d_4^{20} 0.9168, n_{α}^{20} 1.42512, n_{β}^{20} 1.43344, n_{γ}^{20} 1.43781, n_D^{20} 1.42759. $EtOCH_2CH$:CHCH(OEt)$_2$ (25 g.), vaporized over 20 g. SiO_2 gel in the small-scale app. at 250° and 14 mm., gave 11 g. of what was apparently EtOCH:CHCH:CHOEt, b_4 52-4°. The originally colorless substance rapidly darkened and only a mol.-wt. detn. could be used to characterize it (found 154, calcd. 142). Methylene blue and other oxidation-reduction indicators were found to direct the reaction between an alkoxybutadiene and maleic anhydride to condensation and to inhibit the heteropolymerization which predominated in the absence of the catalyst. On heating 5 g. (III) and 5 g. maleic anhydride in 100 cc. thiophene-free C_6H_6, in the absence and in the presence resp., of 1 mg. methylene blue, the % C_6H_6 insol. resin, C_6H_6-sol. resin, and cyclic addn. product (3-ethoxy-1,2,3,6-tetrahydrophthalic anhydride (IV), m.38°) formed were: 10,0;40,14; 40,84. (IV) was dissolved in dil. NaOH, the alk. soln. was acidified, extd. with Et_2O, the Et_2O soln. was dried, and the Et_2O removed to yield 3-ethoxy-1,2,3,6-tetrahydrophthalic acid, m. 139-40° (xylene); the di-Me ester, obtained with CH_2N_2, m. below room temp. b_{14} 120-1°. The effect of the addn. of 2 mg. of catalyst on the yield of (IV) from 10 g. (III) and 10 g. maleic anhydride was detd. In 100 cc Et_2O and in 100 cc. Me_2CO soln., resp., the % yield was as follows: no catalyst, 20, 43; alizarin, 30, 55; anthraquinone, 19, 56; Bismarck Brown R. 39.--; crystal violet (carbinol base), 40,--; 2,6-dichlorophenol-indophenol, 65, 92; dimethylnaphthoquinone, 31,--; fluorescein, 27,--; hydroquinone, --, 92; Indanthrene Blue B.C.S.,

33,--, indanthrene khaki, 19,--; indigo disulfonate,--, 77; indigo trisulfonate, 32,47; indigo tetrasulfonate, --, 67; indigotin, 28, 56; malachite green, 50,--; methylene blue (cryst.), 84, 76; Methylene Blue B Extra Merck, 65, 70; 1,4-naphthoquinone, 49,--; 1,2-naphthoquinone, 70,--; neutral red, 54, 85; phenanthrenequinone, 57,--; pyrogallol, 65, 86; Safranin T, 63, 77; thionine, 32, 94; thymol-indophenol, --, 70; toluylene blue, 45, 93. No relation was found between oxidation-reduction potential and the relative effectiveness of the catalyst. EtOCH:CHCH:CHOEt (43 g.), 3.1 g. maleic anhydride, and 2 g. methylene blue in 50 cc. thiphene-free C_6H_6 heated 3 hrs. on the water bath yielded 3 g. 3,6-diethoxy-1,2,3,6-tetrahydrophthalic anhydride, b. 126° at a very low pressure, a viscous oil which soon crystd., m. 91° (Et_2O-petr. ether), converted to o-$C_6H_4(CO)_2O$ on heating at atm. pressure. 3-Methoxy-1,2,3,6-tetrahydrophthalic anhydride, m. 105° (from EtOAc), was obtained from the reaction at 125° of 10 g. CH_2:CHCH:CHOMe, 10 g. maleic anhydride, 30 cc. $(ClCH_2CH_2)_2O$. CH_2:CHCH:CHOAc (57 g.) in 500 cc. C_6H_6 was added at once to 50 g. maleic anhydride, in 500 cc. boiling C_6H_6 and the mixt. was heated 1.5 hrs. An insol. resin (7.7 g.) was sepd., 55 g. 3-acetoxy-1,2,3,6-tetrahydrophthalic anhydride (V), m. 58° (from Et_2O), and 10.5 g. residue were obtained on distn. of the C_6H_6 soln. A similar expt. but in which 10 mg. methylene blue was present in the maleic anhydride soln. in C_6H_6 before the CH_2:CHCH:CHOAc was added gave 7 g. resin and 71.5 g. (68.5%) (V). (V) was also prepd. more directly from MeCH:CHCHO. Ac_2O (660 g.), 350 g. MeCH:CHCHO, and 300 g. NaOAc were refluxed 5 hrs. at 160°. The distillate of the resulting filtrate (crude CH_2:CHCH:CHOAc), 0.2 g. thionine, 100 g. maleic anhydride, and 200 cc. Me_2CO were warmed 0.5 hr. on the water bath, and the lower-boiling material was removed at a bath temp. of 70° at 10 mm. pressure. (V) was obtained from the residue in 95% yield, based on maleic anhydride. Crude CH_2:CHCH:CHOAc, thionine, maleic anhydride, and Me_2CO contg. 1 g. anhyd. NaOAc treated in a similar manner gave 25-35 g. (70-5%) 3,6-dihydrophthalic anhydride, b0.001 135°, m. 148°, converted to 3,6-dihydrophthalic acid, m. 150-3° (decompn.). 3,6-Dihydrophthalic anhydride was also obtained in almost quant. yield by heating 20 g. (V) in 5 cc. C_5H_5N 10 min. on the steam bath. 2,3-Dihydrophthalic acid (35 g.), m. 180°, was obtained by refluxing 50 g. (V) with 40 cc. concd. HCl, and was converted almost quantitatively by Ac_2O to 2,3-dihydrophthalic anhydride, m. 102°. (V) (42 g.) and 20 g. maleic anhydride were heated in a distg. flask to 200° to remove 11 g. AcOH. Crystals of 3,6-endo-vinylene-1,2,3,4-cyclohexane tetracarboxylic acid anhydride, m. 358° (decompn.), were obtained from the residue by washing with EtOAc; yield 20%. 23 references.--From Chemical Abstracts.

PB L 70358. I. G. FARBENINDUSTRIE A. G., FRANKFURT AM MAIN, GERMANY. A collection of chemical reports. (FIAT Microfilm Reel C-36, Frames 1754-2866) 1936-1946. 1112 f. Price: Microfilm-$6.00 - Enlargement Print-$111.60

This FIAT microfilm reel consists of 130 items dealing chiefly with scale removing agents. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1754-1767A PB L 70358	Precipitation of aluminum nitrate solutions with calcium hydroxide and calcium carbonate. By Hörner. 1941. In German.	$1.50
1768-1772 PB L 70358	Regeneration of cobalt lime catalysts. By Schad. 1941. In German.	1.50
1773-1786 PB L 70358	Magnesia and calcium nitrate from dolomite from the Lahn riverside. By Banthien. 1941. In German.	1.50
1787-1794 PB L 70358	Process for preparing magnesium oxide from dolomite. By Banthien. 1941. In German.	1.50
1795-1799 PB L 70358	On questions arising in the construction of "Mofatit" filters. By Richter. 1940. In German.	1.50
1800-1804 PB L 70358	Considerations on the danger of explosion while producing nitrous oxide by decomposing ammonium nitrate at normal and increased pressures. By Banthien. 1942. In German.	1.50
1805-1806 PB L 70358	These frames are missing.	
1807-1810 PB L 70358	Possibilities of saving precious metals in the oxidation of ammonia without decreasing the yield. By Seebohm. 1942. In German.	1.50
1811-1823 PB L 70358	Production of potassium pyrosulfate within a revolving tube heated from the inside. By Schmidt. 1935. In German.	1.50
1824-1847 PB L 70358	Influence of metallic impurities dissolved in mercury on the decomposition of sodium amalgam. By Morgenstern. 1941. In German.	2.50
1848-1859 PB L 70358	Increase of the capacity of a sodium amalgam decomposer by a good conducting union between graphite and sodium amalgam over iron. By Morgenstern. 1941. In German.	1.50
1860-1871B PB L 70358	Experiments for the production of pure anhydrous sodium sulfide. By Oswald and Neuber. 1942. In German.	1.50
1872-1877 PB L 70358	Examinations of active MgO preparations with the electron microscope. By Gundermann. 1941. In German.	1.50
1878-1882 PB L 70358	Experiments for the production of mellitic acid by oxidizing carbon ("Eabit"), by means of nitrosyl sulfuric acid with varying water content. By Reuter. 1942. In German.	1.50
1883-1887 PB L 70358	These frames are identical with 1878-1882.	
1888-1892 PB L 70358	These frames are identical with 1878-1882.	
1893-1896 PB L 70358	These frames are identical with 1878-1882.	
1897-1903A PB L 70358	Production of nitrous oxide from ammonium nitrate at increased pressure. By Banthien. 1942. In German.	1.50

1904-1918 PB L 70358 — Production of chlorosulfonic acid by use of SO_3 from the catalytic chamber. By Beyer. 1942. In German. 1.50

1917-1926 PB L 70358 — Production of 60 percent sodium sulfide by the amalgam process. By Hass and Negwitz. 1942. In German. Legibility partly poor. 1.50

1927-1931 PB L 70358 — Old and new brands of "Tutogen" used as foam fire-extinguishers. By Daimler. 1942. In German. May reproduce poorly. 1.50

1932-1943 PB L 70358 — Catalytic oxidation of ammonia to nitric oxides. By Ketzer. 1943. In German. 1.50

1944-1950 PB L 70358 — Refrigeration by negative heat of solution. By Ketzer. 1940. In German. 1.50

1951-1955A PB L 70358 — Experiments to replace lithium carbonate and rice starch in the production of "Leuchtblau" (luminous paint). By Schad. 1942. In German. 1.50

1956-1966 PB L 70358 — Manufacture of inorganic luminous substances. By Teske. 1942. In German. 1.50

1967-1975 PB L 70358 — Technical zinc sulfide as luminous material. By Podschuss. 1942. In German. 1.50

1976-1984 PB L 70358 — Investigations on the solubility of crude alumina in sodium hydroxide solution, obtained by precipitation of aluminum nitrate with calcium carbonate in the form of lime stone flour. By Hörner. 1942. In German. 1.50

1985-1998 PB L 70358 — Summary of the literature on the use of sulfamic acid and its salts, including patent specifications. By Ketzer. 1942-1943. In German. 1.50

1999-2007 PB L 70358 — Production of "Leuchtblau", a luminous substance based on calcium-strontium sulfide. By Schad. 1942. In German. 1.50

2008-2023 PB L 70358 — Magnesium oxide and calcium nitrate from dolomite. By Ketzer. 1942. In German. 2.00

2024-2033, 2618-2619 2833 PB L 70358 — Amides of sulfuric acid. By Oswald and Reuter. 1942. In German. 1.50

2034-2067 PB L 70358 — Production of sodium from sodium amalgam. By Hergheimer. 1942. In German. 3.50

2068-2069 PB L 70358 — Brief description of the ammonia oxidation plant at Oppau. By Helder. 1942. In German. 1.50

2070-2079 PB L 70358 — Determination of the reactivity of coke. By Grässner. 1942. In German. 1.50

2080-2097 PB L 70358 — Extraction of sulfurylamide from the product of the lead chamber process, using organic solvents. By Oswald. 1942. In German. 2.00

2098-2106 PB L 70358 — Experiments for the production of dialyzed ferric hydroxychloride solution. By Hörner. 1942. In German. 1.50

2107-2115 PB L 70358 — Possibilities of saving platinum in the oxidation of ammonia. By Friedel and Haider. In German. Legibility poor. 1.50

2116-2123A PB L 70358 — Description of the Leuna plant for production of a highly concentrated nitric acid according to the autoclave method. By Sänger. 1942. In German. 1.50

2124-2129 PB L 70358 — These frames are identical with the foregoing.

2130-2136 PB L 70358 — Studies regarding various binders for the luminous paint "Leuchtblau." By Schad. 1942. In German. 1.50

2137-2145 PB L 70358 — Possible uses of "Wofatits" (ion exchangers based on thetic resins). 1942. In German. 1.50

2146-2155 PB L 70358 — Coin silver refining. By Humpelmann. 1941. In German. 1.50

2156-2157 PB L 70358 — Research in the field of SO_2 concentrations. 1942. In German. 1.50

2158-2163 PB L 70358 — SO_2 plant at Wolfen. By Müller. 1942. In German. 1.50

2164-2165 PB L 70358 — Experiments for the production of concentrated chlorine from waste chlorine by means of silica gel. By Passek. 1942. In German. 1.50

2166-2167 PB L 70358 — Inorganic fillers for rubber. By Passek. 1942. In German. 2.50

2168-2175 PB L 70358 — Alumina produced from clay. By Brandes. 1942. In German. 1.50

2176 PB L 70358 — Application of resin exchangers for analytical purposes. By Sutterlin. 1942. In German. 1.50

2177-2181 PB L 70358 — On a correction in the calculation of gas consumption (yield in NO) in the oxidation of ammonia. By Sänger. 1943. In German. 1.50

2182-2187 PB L 70358 — Production of coke poor in ash content. By Lorenz. 1943. In German. 1.50

2188-2194 PB L 70358 — Planning a plant for the production of highly concentrated nitric acid by processing inversion gases. By Moosbrugger and Rathke. 1943. In German. 1.50

2195-2202 PB L 70358 — Calculation of the gas consumption (yield in NO) in ammonia oxidation. By Ketzer and Haider. 1943. In German. 1.50

2203-2209 PB L 70358 — Influence of lithium carbonate and other addition products on the brightness of luminous paint ("Leuchtblau"). By Schad. 1943. In German. 1.50

2210-2222 PB L 70358 — Electrode carbon from coal from which the ashes were removed. 1943. In German. 1.50

2223-2244 PB L 70358 — Experiments for activating various carbonaceous materials for production of activated charcoal suitable as a depolarizer in batteries. By Brinkmann. 1942. In German. 2.50

2245-2248A PB L 70358 — Studies concerning magnesia cement (xylolite). By Ketzer. 1943. In German. 1.50

2249-2260 PB L 70358 — Examination of metal surfaces by means of the electron microscope. By Kircher. 1943. In German. 1.50

2261-2265 PB L 70358 — Apparatus for the continuous reaction of fluids with gases. By Jonas. 1943. In German. 1.50

2266-2280 PB L 70358 — Processing of waste sulfuric acid. By Senger. 1943. In German. 1.50

2281-2296 PB L 70358 — Concentration of nitric acid. By Moosbrugger. 1943. In German. 2.00

2297-2322 PB L 70358 — Production of dithionite by direct electrolysis. By Mitschke. 1933. In German. 3.00

2323-2330 PB L 70358 — Decomposition experiments with chlorosulfonic acid. By Lorens. 1943. In German. 1.50

2331-2339 PB L 70358 — Purification and concentration of waste sulfuric acid. By v. Nagel. 1943. In German. 1.50

2340-2372 PB L 70358 — On the reaction of magnesium oxide and magnesium hydroxide with carbon dioxide with regard to the technical preparation of pure magnesium oxide. By Oswald. 1943. In German. 3.50

2373-2395 PB L 70358 — Experiments for the anodic oxidation of chromium sulfate in a strong sulfuric solution. By Horner. 1943. In German. 2.50

2396-2407 PB L 70358 — Experiments for the production of ammonium thiocyanate from ammonia and carbon disulfide. By Schad. 1943. In German. 1.50

2408-2410 PB L 70358 — Fire-proofing of textiles exposed to contamination with thermite. By Mischelitzel. 1943. In German.- 1.50

2411-2414 PB L 70358 — Recovery of sulfur from mineral springs containing hydrogen sulfide. By Horner. 1943. In German. 1.50

2415-2425 PB L 70358 — Nitrogen plants. By Haidler. 1943. In German. 1.50

2426-2433 PB L 70358 — The technical use of mercury in metallurgy. By Hohn. 1943. In German. 1.50

2434-2440 PB L 70358 — Smelting of ores containing lead and zinc, in the blast furnace. By Koch. 1943. In German. 1.50

2441-2444 PB L 70358 — Amalgam titration. By Hohn. 1943. In German. 1.50

2445-2448 PB L 70358 — Recovery of metals found in traces, from the liquor of the copper smeltery, by conversion with amalgam. By Emert. 1943. In German. 1.50

2449 PB L 70358 — Operations with amalgam. By Rosin. 1943. In German. 1.50

2450-2452 PB L 70358 — Practical application of the Nernst heat theorem. By Wietzel. In German. 1.50

2453-2456 PB L 70358 — Processing of a waste acid consisting of nitric and sulfuric acid. By Moosbrugger. 1944. In German. 1.50

2457-2471 PB L 70358 — Preparation of mixed acid for nitration. By Haider. 1944. In German. 1.50

2472-2479 PB L 70358 — Production of chlorine without current. By Schulze. 1942. In German. 1.50

2480-2489 PB L 70358 — See frames 2331-2339.

2490-2496 PB L 70358 — Production of fixed nitrogen. By Sänger. 1944. In German. 1.50

2497-2501 PB L 70358 — Measuring the distance at which luminous paints can be seen. By Schad. 1944. In German. 1.50

2502-2509 PB L 70358 — Photometric measurement of luminous paints. By Kotzer. 1944. In German. 1.50

2510-2515 PB L 70358 — Tempering of luminous paints. By Schad. 1944. In German. 1.50

2516-2520 PB L 70358 — Improving the stability of the luminous paint, "Leuchtblau." By Schad. 1944. In German. 1.50

2521-2523 PB L 70358 — Experiments for producing lead cyanamide from the wastes of lead hydroxychloride. By Hörner. 1944. In German. 1.50

2524-2530 PB L 70358 — Knowledge of luminous paints. By Teske. 1945. In German. 1.50

2531-2544 PB L 70358 — The use of foam preventing agents. By Fink. 1942. In German. 1.50

2545-2554 PB L 70358 — Processing of gas liquor from coking plants by adding sodium hydroxide solution. By Haider. 1945. In German. 1.50

2555-2561 PB L 70358 — Cupric hydroxychloride produced from copper wastes. By Schader. 1945. In German. 1.50

2562-2566 PB L 70358 — Sulfamic acid. 1946. In German. 1.50

2567-2570 PB L 70358 — Suitability of several mineral acids, particularly sulfamic acid, for pickling and as scale removing agents in boilers. By Werner. 1944. In German. 1.50

2571-2573 PB L 70358 — Unimportant correspondence. In German. 1.50

2574-2576 PB L 70358 — Patent specifications concerning the preparation of sulfamic acid (No. 636 329, 641 238 and 630 329). By Baumgartner. 1937. In German. 1.50

2577-2578 PB L 70358 — Sulfamic acid. Specification of patent 564 123. By Schäfer and Griesbach. 1932. In German. 1.50

2579-2581 PB L 70358 — Unimportant correspondence. In German. 1.50

2582 2590-2592 PB L 70358 — Sulfamic acid as scale removing agent. By Heissmann. 1944. In German. 1.50

2583-2586 PB L 70358 — Behavior of iron in different acids at 40 and 80° C., with and without addition of inhibitors substitutes. By Werner. 1944. In German. 1.50

2587-2589 PB L 70358 — Unimportant correspondence. In German. 1.50

2590-2592 PB L 70358 — See frame 2582.

2593-2617 PB L 70358 — Unimportant correspondence in connection with sulfamic acid. In German. 2.50

2618-2619 PB L 70358 — See frames 2024-2033.

2620-2621 PB L 70358 — Unimportant inter office communications. In German. 1.50

2622-2627 PB L 70358 — Sulfamic acid as an inhibitor. By Teske. 1944. In German. 1.50

2628-2631 PB L 70358 — Direction for the use of sulfamic acid as a solvent for boiler scale which contains carbonate. 1944. In German. 1.50

2632-2654 PB L 70358 — Inter office communications consisting of inquiries, replies etc., relating to various chemicals. In German. 2.50

2655-2657 PB L 70358 — Sulfamic acid as a scale removing agent. By Fischer. 1943. In German. 1.50

2658-2662 PB L 70358 — "Clinol" (dibenzyl sulfonate) as an inhibitor. By Werner. 1943. In German. 1.50

2663-2670 PB L 70358 — Inter office communications relating to sulfamic acid and similar compounds. In German. 1.50

2671-2674 PB L 70358 — Summary of the literature dealing with the use of sulfamic acid. By Griesbach. 1942. In German. 1.50

2675 PB L 70358 — U. S. Patent No. 2 191 754 concerning sulfamic acid. By Dupont de Nemours & Co. 1938. In German. 1.50

2676-2689 PB L 70358 — Inter office communications concerning sulfamic acid and its salts. In German. 1.50

2690-2691 PB L 70358 — Use of sulfamic acid for cleaning optical glasses. By Sänger. 1942. In German. 1.50

2692-2698 PB L 70358 — Inter office communications relating to the sulfamic acid preparation "Cillit." In German. 1.50

2699-2703 PB L 70358 — "Cillit" (a dyed 75 per cent amino acid), an agent for scale removal in boilers and for rapid decalcification. By Vogelmann. In German. 1.50

2704-2705 2810 2816 PB L 70358 — Sulfamic acid salts as fireproofing agents. By Ketzer. 1942. In German. 1.50

2706-2708 PB L 70358 — Inter office communications of no interest. In German. 1.50

2709 2738 PB L 70358 — Advertising pamphlet for sulfamic acid. In German. 1.50

2710-2724 PB L 70358 — Inter office communications concerning sulfamic acid. In German. 1.50

2725-2733 PB L 70358 — Salts of sulfamic acid. By Hixter. 1941. In German. 1.50

2734-2737 PB L 70358 — Sodium chloroamino sulfate liquor. 1936. May reproduce poorly. In German. 1.50

2738 PB L 70358 — See frame 2709.

2739-2743 PB L 70358 — Inter office communications without interest. In German. 1.50

2744-2745 2749-2750 PB L 70358 — Patent claim (No. H 156 304 IVd/ 81 (5)) concerning the use of sulfamic acid. By Wolter. 1938. In German. 1.50

2746-2747 PB L 70358 — Processing the mother liquor obtained in the production of sulfamic acid. By Stecher. 1940. In German. 1.50

2748 PB L 70358 — Inter office communications. In German. 1.50

2749-2750 PB L 70358 — See frames 2744-2745.

2751-2762 PB L 70358 — Inter office communications dealing chiefly with sulfamic acid. In German. 1.50

2763 PB L 70358 — Sulfamic acid. By Ketzer. 1939. In German. 1.50

2764-2785 PB L 70358 — Inter office communications relating to sulfamic acid and similar compounds. In German. 2.50

2786 PB L 70358 — Method of preparing sulfamic acid (U. S. Patent 2 109 952 of the Imperial Chemical Industry; Inventor Max Wyler; 1936). In German. 1.50

2787-2801 PB L 70358 — Inter office communications consisting mainly of inquiries, reply notes, calculation sheets, etc. relating to sulfamic acid and similar compounds. In German. 1.50

2802-2807 PB L 70358 — Analysis of sulfamic acid. In German. 1.50

2808-2809 PB L 70358 — Inter office communications without interest. In German. 1.50

2810 PB L 70358 — Advertisement informing about sulfamic acid. In German. 1.50

2811-2815 PB L 70358 — Accompanying letters and other inter office correspondence. In German. 1.50

2816 PB L 70358 — Sulfamic acid, a new fire-resistant commercial raw material. (An American product). In German. 1.50

2817-2826 PB L 70358 — Accompanying letters, cost calculation sheets and other inter office communications without major interest. In German. 1.50

2827 PB L 70358 — Brief report on the chlorination of sulfamic acid, intended to explain an explosion occurring during this process. By Stelzer. 1937. In German. 1.50

2828-2830 PB L 70358 — Statement intended to explain an explosion occurring during the chlorination of sulfamic acid. In German. 1.50

2831-2832 PB L 70358 — Chlorosulfamic acid. By Ketzwe. 1936. In German. 1.50

2833 PB L 70358 — Short notes on the items reported on frames 2024-2033, which see. In German. 1.50

2834-2866 PB L 70358 — Order and dispatch blanks. In German. 3.50

PB L 70358-S. I. G. FARBENINDUSTRIE A. G., FRANKFURT AM MAIN, GERMANY. A collection of chemical reports. (FIAT Microfilm Reel C-36, Frames 1754-2866, abstract cards) 1936-1946. 146 p. Price: Microfilm-$3.00 - Photostat-$10.00
These are short abstracts of the items on reel C-36 (PB L 70358) described above. They were prepared by FIAT abstractors in Germany.

PB L 70427. I. G. FARBENINDUSTRIE A. G., OFFENBACH, GERMANY. A collection of laboratory and other reports.

(FIAT Microfilm Reel E 24, Frames 6422-7317) 1925-1944. 896 f. Price: Microfilm-$6.00 - Enlargement Print-$90.00
The reports reproduced on this FIAT microfilm reel deal chiefly with dyes and plastics. 125 individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6422-6425 7221-7231 PB L 70427	Use of esters as plasticizers. 1944. In German. Patent application I 78672 IVc/39 b included.	$1.50
6426-6432 7206-7220 PB L 70427	Preparation of 1,4-cyanobutanol. 1944. In German. Patent application I 78659 IVd/12 c included.	2.50
6433-6435 7188-7204 PB L 70427	Use of metal salts as delustering agents. 1944. In German. Patent application I 78676 IVc/22 h included.	2.00
6436-6437 7142-7187 PB L 70427	Reports on stable lacquer solutions. 1944. In German. Patent application I 78113 IVc/22 h included.	5.00
6438-6440 PB L 70427	"Echtrotsalz FR." By Seidenfaden. 1941. In German.	1.50
6441-6442 PB L 70427	Phenoxy acetic acid. By Seidenfaden. 1942. In German.	1.50
6443-6446 PB L 70427	Phenoxy acetic acid-formaldehyde resin. By Seidenfaden. 1942. In German.	1.50
6447-6448 PB L 70427	p-Cresoxy acetic acid. By Seidenfaden. 1942. In German.	1.50
6449-6454 PB L 70427	p-Cresoxy acetic acid-formaldehyde resin. By Seidenfaden. 1942. In German.	1.50
6455-6456 PB L 70427	m-Cresoxy acetic acid. By Seidenfaden. 1942. In German.	1.50
6457-6458 PB L 70427	m-Cresoxy acetic acid-formaldehyde resin. By Seidenfaden. 1942. In German.	1.50
6459-6460 PB L 70427	o-Cresoxy acetic acid. By Seidenfaden. 1942. In German.	1.50
6461-6462 PB L 70427	Cresoxy acetic acid. By Seidenfaden. 1942. In German.	1.50
6463 PB L 70427	Instructions for preparing 2,2'-dinitro-diphenyl-disulfide. By Thomae. 1938. In German.	1.50
6464 PB L 70427	Instructions for preparing 2-nitro-phenyl-methylsulfide. By Thomae. 1938. In German.	1.50
6465 PB L 70427	Instructions for preparing 2-nitro-phenyl-methylsulfone. By Thomae. 1938. In German.	1.50
6466 PB L 70427	2-Aminophenyl-methylsulfone. By Thomae. 1938. In German.	1.50
6467-6468 PB L 70427	1-Amino-2-chloro-4-nitro-benzene-6-sulfonyl dimethylamine. By Thomae. 1937. In German.	1.50
6469-6471 PB L 70427	"Echtrotsalz FGG." By Albert. 1941. In German.	1.50
6472-6487 PB L 70427	"Echtbraunsalz V" (zinc chloride double salt). By Keller. 1939. In German.	2.00
6488-6490 PB L 70427	1-Chloro-2-nitro-4-methyl-sulfonyl-benzene. By Thomae. 1938. In German.	1.50
6491 PB L 70427	"Rapidazolmarineblau." By Thomae. 1935. In German.	1.50
6492-6501 PB L 70427	"Diazosalz No. 817." By Jung and Schnitzspahn. 1925. In German.	1.50
6502-6503 PB L 70427	Diazo salts from benzene-1-amino-benzanthrone. In German.	1.50
6504-6507 PB L 70427	"Echtrotsalz FGG." By Zitscher. 1939. In German.	1.50
6508-6525 PB L 70427	Report on fast dyeing salts with increased stability in the printing pastes. By Grimmel. 1939. In German.	2.00
6526 PB L 70427	Sarcosine ethyl ester. 1939. In German.	1.50
6527 PB L 70427	Reduction of "Echtbordobase GL." By Rimele. 1939. In German.	1.50
6528-6529 PB L 70427	"Echtblau BB Base." By Rimele. 1939. In German.	1.50
6530-6532 PB L 70427	Diazonium chloride of 4-amino-4'-methoxy-diphenylamine. By Thomae. In German.	1.50
6533-6534 PB L 70427	Nitrosamine from 1-amino-3-chloro-benzene. By Seidenfaden. 1931. In German.	1.50
6535-6537 PB L 70427	Instructions for preparing the diazo amino compound of "Echtrot KB Base" with sarcosine ("Azorotsalz KBS"). By Thomae. 1939. In German.	1.50
6538-6544 PB L 70427	Preparation of a rapidogen dye from a diazoamino compound of "Echtrot KB Base" stabilized with sarcosine and "Naphthol AS-D" ("Rapidogenrot 3G Konz."). By Thomae. 1939. In German.	1.50
6545 6548-6549 PB L 70427	"Orange LG." In German.	1.50
6546-6547 6550-6554 PB L 70427	"Echtrot B Base." In German.	1.50
6548-6549 PB L 70427	See frame 6545.	
6550-6554 PB L 70427	See frames 6546-6547.	
6555 PB L 70427	Sodium diphenylamine-4-diazo-sulfonate. By Thomae. 1938. In German.	1.50
6556 PB L 70427	1-Amino-2-nitro-4-methoxybenzene. By Seidenfaden. 1937. In German.	1.50
6557 PB L 70427	Nitrosamine from 1-amino-4-methyl-2-nitrobenzene. By Seidenfaden. 1925. In German.	1.50
6558 PB L 70427	Nitrosamine from 4-chloro-1,2-anisidine. By Seidenfaden. 1925. In German.	1.50
6559 PB L 70427	"Rapidechtrot GL." By Seidenfaden. In German.	1.50
6559 6604 PB L 70427	"Rapidechtbraun BH." By Seidenfaden. In German.	1.50
6560-6561 PB L 70427	Diazonium zinc chloride double salt from 1-amino-4-benzylamino-2,5-dichlorobenzene. By Jung. 1938. In German.	1.50
6562 PB L 70427	Hydrocyanic acid. 1938. In German.	1.50

6563-6569 7261-7274 PB L 70427 — Cyanogenation according to Sandmeyer. By Schmidt. 1937. In German. 2.50

6570-6572 PB L 70427 — 1-Nitro-2,5-dimethoxy-4-cyanobenzene. In German. 1.50

6573 PB L 70427 — 1-Amino-2,5-dimethoxy-4-cyanobenzene. In German. 1.50

6574-6579 PB L 70427 — 1-Cyano-2-methyl-4-amino-5-chlorobenzene. In German. 1.50

6580 PB L 70427 — Sarcosine hydrochloride. 1938. In German. 1.50

6580 PB L 70427 — Methyltaurine. 1938. In German. 1.50

6581 PB L 70427 — "Wollstraschwarz." In German. 1.50

6582 PB L 70427 — 1-Acetylamino-benzene-4-sulfochloride. By Brickert. In German. 1.50

6583 PB L 70427 — Benzene sulfonyl-o-toluidine. 1937. In German. 1.50

6584 6589 PB L 70427 — Beta-hydroxynaphthoyl chloride. By Brickert. In German. 1.50

6585 PB L 70427 — Diazomethane. 1937. In German. 1.50

6586-6587 PB L 70427 — Diazonium zinc chloride double salt from 1-amino-2-methyl-4-nitrobenzene. By Seidenfaden. In German. 1.50

6588 PB L 70427 — 1-Methyl-3-chloro-4,6-dinitrobenzene, 4-amino-3,6-dimethoxy-2,4-dinitro-5-methyl-diphenylamine, 1-methoxy-3-chloro-4,6-dinitrobenzene. By Seidenfaden. In German. 1.50

6589 PB L 70427 — See frame 6584.

6590 PB L 70427 — 1-Phenoxy-2-bromoethane. In German. 1.50

6591 PB L 70427 — 1-Penoxy-2-diethylaminoethane. In German. 1.50

6592 PB L 70427 — Glycol monophenylether. In German. 1.50

6593 PB L 70427 — Glycerol-1-phenylether. In German. 1.50

6594 PB L 70427 — 1-Phenoxy-2-diethanolamino-methane. In German. 1.50

6595 PB L 70427 — See frame 6588.

6596 PB L 70427 — N-methyl-3-methoxy diphenylamine. In German. 1.50

6597 PB L 70427 — Morpholine (tetrahydro-1,4,2-oxazine). In German. 1.50

6598 PB L 70427 — Alpha, alpha'-tetramethyl-gamma-piperidone. In German. 1.50

6599 PB L 70427 — 4-Nitroanthranilic methyl ester. In German. 1.50

6600 PB L 70427 — 1-Amino-4-nitrobenzene-2-sulfonic phenyl ester. In German. 1.50

6601-6602 PB L 70427 — Phosphazo benzenesanilide. By Barth. 1937. In German. 1.50

6603 PB L 70427 — Nitrosamine from 1-amino-2-methyl-5-chlorobenzene. In German. 1.50

6604 PB L 70427 — See frame 6559.

6605 PB L 70427 — "Echtrot B Base." In German. 1.50

6606 PB L 70427 — 1-Amino-2-nitrobenzene-4-sulfonyldimethylamine. In German. 1.50

6607 PB L 70427 — 1-Amino-4-nitrobenzene-2-sulfonyldiethylamine. In German. 1.50

6608 PB L 70427 — 2,6-Dichloro-p-nitraniline. By Jung. 1936. In German. 1.50

6609 PB L 70427 — This frame is identical with frame 6608.

6610-6612 PB L 70427 — Diazotization, of 4-amino-3-methoxy-diphenylamine. By Keller. 1934. In German. 1.50

6613-6614 PB L 70427 — Method of condensing resorcinol with aromatic amines. By Seidenfaden. In German. 1.50

6615-6618 PB L 70427 — "Diphenylschwarzbase I." 1930. In German. 1.50

6619-6622 PB L 70427 — Preparation of p-methoxyphenyl-"Paraminsäure" (sodium 4'-methoxy-4-nitro-diphenylamine-2-sulfonate). By Müller. 1939. In German. 1.50

6623-6629 PB L 70427 — "Blaubase F" moist (4'-methoxy-4-aminophenylamine sulfate). By Müller. 1939. In German. 1.50

6630-6632 PB L 70427 — Behavior of "Blaubase B" in the presence of sodium hydroxide. By Heubach. In German. 1.50

6633-6635 PB L 70427 — Preparation of "Variaminblausalz B." By Keller. 1937. In German. 1.50

6636-6639 PB L 70427 — "Blaubase F" moist. 1934. In German. 1.50

6640-6648 PB L 70427 — "Variaminblaubase B" (4-amino-4'-methoxy diphenylamine sulfate). By Keller. 1935-1937. In German. 1.50

6649-6650 PB L 70427 — Instructions for preparing "Variaminblausalz B." In German. 1.50

6651-6679 PB L 70427 — Studies on the method of preparing "Variaminblau FG Base" (4-amino-3-methoxy-diphenylamine). By Spänig. 1937. In German. 3.00

6680-6687 PB L 70427 — Di- and tetrahydropyrane. By Ritter. 1940. In German. 1.50

6688-6690 PB L 70427 — Experiences in hydrogenating with Raney catalysts. By Weissenborn. 1939. In German. 1.50

6691-6697 PB L 70427 — Solvents, plasticizers, and perfumes from furfural. By Gnuchtel and Weissenborn. 1940. In German. 1.50

6698-6705 PB L 70427 — Ring-opening reactions on furan derivatives. By Schneidl. 1940. In German. 1.50

6706-6709 PB L 70427 — Present state of the method of preparation of tetrahydrofuran. By Eilbrecht and Trieschmann. 1940. In German. 1.50

6710-6715 PB L 70427 — Procedure for preparing pigment-containing materials for photographic purposes. By Wolfen. In German. Patent application I 64477 IVa 57b (18/07). 1.50

6516-6717 PB L 70427 — Procedure for preparing colored spinning solutions from cellulose esters or ethers. By Jaeck. 1936. In German. Patent application G 94212 IVc/29b [3/03]. 1.50

6718-6720 PB L 70427 — Instructions for the preparation of "Permanentrot 23448." By Fischer. 1940. In German. 1.50

6721-6935 PB L 70427 — Preparation of azo pigment dyes for producing dyes for acetate rayon spinning solutions. 1937-1939. In German. 21.50

6936-7083 PB L 70427 — Preparation of azo pigment dyes for producing dyes for copper rayon and viscose spinning solutions. 1937-1939. In German. 15.00

7084-7085 PB L 70427 — Brown pigments "L. 2004" and "L. 2104." By Fischer. 1941. In German. 1.50

7086 PB L 70427 — Orange pigment "L. 2051." By Fischer. 1941. In German. 1.50

7087-7100 PB L 70427 — Brown pigments, orange pigments and "Pigmentbordo." By Fischer. 1941. In German. 1.50

7101-7104 PB L 70427 — Red pigments "L. 1181" and "L. 100." By Fischer. 1941. In German. 1.50

7105 PB L 70427 — Brown pigment "L. 1297." By Fischer. 1941. In German. 1.50

7106 PB L 70427 — Green pigment "L-L 764." By Fischer. 1941. In German. 1.50

7107-7108 PB L 70427 — "Spinnrot V 157." 1943. In German. 1.50

7109-7112 PB L 70427 — 1-Amino-2-methoxybenzene-5-carboxylic acid cyclohexylamide. By Hägenböcker and Zitscher. 1942-1943. In German. 1.50

7113 PB L 70427 — 1-Amino-2-methoxybenzene-5-carboxyl-cyclohexylamine. By Brickert. 1941. In German. 1.50

7114 PB L 70427 — 1-Aminobenzene-3-carboxylic acid-n-butylamide. 1941. In German. 1.50

7115-7116 PB L 70427 — 1-Aminobenzene-3-carboxyl-n-butylamine. By Brickert. 1941. In German. 1.50

7117-7123 PB L 70427 — Intermediates for three "vulkanecht" dyes. By Fischer and Barth. 1936. In German. 1.50

7124 PB L 70427 — Intermediates for "Vulkanechtrot 19706." By Fischer. 1936. In German. 1.50

7125 PB L 70427 — Intermediates for "Vulkanechtrot 21251" and "21252." By Fischer. 1936. In German. 1.50

7126 PB L 70427 — Intermediates for "Vulkanechtrot "21184" and "21186." By Fischer. 1936. In German. 1.50

7127 PB L 70427 — 2-Aminotoluene-4-carboxyl-m-xylidine. By Fischer. 1936. In German. 1.50

7128-7129 PB L 70427 — "Vulkanechtrot 21185." By Fischer. 1936. In German. 1.50

7130-7131 PB L 70427 — "Vulkanechtrot 19706." By Fischer. 1935. In German. 1.50

7132-7134 PB L 70427 — "Vulkanechtrot BBP." By Fischer. 1934-1935. In German. 1.50

7135-7136 PB L 70427 — "Vulkanechtrot 5 BP." By Fischer. 1934. In German. 1.50

7137-7138 PB L 70427 — "Vulkan" dye "361." By Huss. 1934. In German. 1.50

7139-7141 PB L 70427 — "Naphtol AS-OL." By Barth. 1944. In German. 1.50

7142-7187 PB L 70427 — See frames 6436-6437.

7188-7204 PB L 70427 — See frames 6433-6435.

7205-7220 PB L 70427 — See frames 6428-6432.

7221-7231 PB L 70427 — See frames 6422-6424.

7232-7253 PB L 70427 — Short path distilling apparatus. By Merkel and Krzikalla. 1943. In German. 2.50

7254-7255 PB L 70427 — "Iganil" molding powder. By Pros. 1943. In German. 1.50

7256-7260 PB L 70427 — "Iganil 3" (moist) and "Iganil 6" (moist). By Pros. 1941. In German. 1.50

7261-7274 PB L 70427 — See frames 6563-6569.

7275-7278 PB L 70427 — 1-Nitro-2,5-dimethyxy-4-cyanobenzene. In German. 1.50

7279-7285 PB L 70427 — 1-Cyano-2-methyl-4-amino-5-chlorobenzene. In German. 1.50

7286-7299 PB L 70427 — 1-Amino-2,5-dimethoxy-4-nitrile-benzene. 1934. In German. 1.50

7300-7308 7313-7314 PB L 70427 — 6-Cyano-2,3-hydroxynaphthoic acid. In German. 1.50

7309-7312 7315-7316 PB L 70427 — Naphthalene derivatives. By Schmidt. 1938. In German. 1.50

7313-7314 PB L 70427 — See frames 7300-7308.

7315-7316 PB L 70427 — See 7309-7312.

7317 PB L 70427 — 6-Nitrile-2,3-hydroxynaphthoic acid. In German. 1.50

PB L 70427-S. I. G. FARBENINDUSTRIE A. G., OFFENBACH, GERMANY. A collection of laboratory and other reports. (FIAT Microfilm Reel E 24, Frames 6422-7317, abstract cards) 1925-1944. 137 p. Price: Microfilm-$3.00 - Photostat-$10.00
There are short abstracts of the items on reel E 24 (PB L 70427) described above. They were prepared by FIAT abstracters in Germany.

PB L 16682. I. G. FARBENINDUSTRIE A. G. Patent applications of the Textile Auxiliary Aids Commission, 1936-1938. (FIAT Microfilm Reel C 54) Jan 1946. 724 f. Price: Microfilm-$6.00 - Enlargement print-$72.50
This reel consists of patent applications from I. G. Farbenindustrie at Ludwigshafen. They cover preparations of detergents, emulsifiers, mercerization solutions, and wetting, dispersing, tanning, water- and fireproofing agents. Abstracts of the film and of the individual patent applications appear in the section, Patents - Chemical and Allied Products, of this issue.

* PB L 80406. LAWRENCE, J. and others. Hydrogen peroxide solution, perhydrol and perhydrit (urea hydrogen peroxide). (E. Merck, Darmstadt). (BIOS Final Rept 1130, Item 22). Feb 1946. 33 p. Price: Microfilm-$1.00-Photostat-$3.00
No hydrogen peroxide was made at Darmstadt; it was bought from Elektrochemische Werke, Hollriegelskreuth, Munich (EWM) and sold in the following forms: (1) Technical hydrogen peroxide; (2) medicinal hydrogen peroxide; (3) tropen perhydrol (tropical); (4) perhydrol pro analyse; and 5 perhydrit (urea peroxide). Technical and medicinal grades were prepared by diluting EWM peroxide to various concentrations and stabilizing with hippuric acid and acetic acid. Both perhydrol solutions contained 30% peroxide by weight. The tropical grade was distilled once and stabilized and perhydrol pro analyze distilled three times and sold unstabilised. Perhydrit was a crystalline compound prepared by the complete evaporation of urea and hydrogen peroxide. Citric acid and hippuric acid were added as stabilizer. The bulk of the output was sold in tablet form. Combined with peppermint, it was sold in oval tablets as Perovetten. The preparation of these products (solutions and tablets) are described. Analytical methods are given in appendices. A drawing of the perhydrol distillation apparatus is presented.

* PB L 79178. MCAULAY, J. and others. Hydrazine hydrate and C-stoff production at Gersthofen. Final report. (CIOS File XXXIII-46, Item 22). May 1947. 28 p. Price: Microfilm-$1.00 - Photostat-$2.00
Information was obtained concerning the production of these products at Chemische Fabrik, Gersthofen (V. Transche & Co., K.-G.), a subsidiary of Elektrochemische Werke, Munich (E.M.W.). Hydrazine was prepared by a modification of the original Raschig process. The hydrazine which was formed by the reaction of sodium hypochlorite and ammonia was not recovered as a sulfate, but was separated from the reaction mixture by direct rectification. At Gersthofen, the reaction took place at 160° C under 30 atmospheres and was completed in 1 to 1.5 seconds. At this temperature, using a tenfold excess of ammonia, a yield of 60-70% hydrazine was obtained. Hydrazine hydrate was made up to 92% concentration for naval use and to 80-85% for the Luftwaffe. The C-stoff was made by mixing the components (methanol, water and hydrazine hydrate) in a large vessel. The report describes the process and equipment, process efficiencies and manpower requirements, and the properties, storage, and applications of hydrazine hydrate and C-stoff Flowdiagrams (1-flowdiagram illegible) and a diagram of the salt separator in the hydrazine process are presented. Appendix I summarizes ten patent applications covering research leading to the Gersthofen process.

* PB L 79177. MCAULAY, J. and others. Hydrogen peroxide production at Kufstein. (CIOS File XXXIII-45, Item 22). May 1947. 41 p. Price: Microfilm-$1.00 - Photostat-$3.00
This report describes the production of hydrogen peroxide at Elchemie G.m.b.H. at Schaftenbau, bei Kufstein, a company owned by Schering (50%) and Riedel de Haen (50%). The factory was built to work the Loewenstein (ammonium persulfate) process. At this plant, hydrogen peroxide of 35% strength is produced by a completely liquid process from the distillation of an ammonium persulfate solution which has been prepared by the electrolysis of sodium bisulfate. The electric supply is 25,000 volts, being transformed and rectified to 150 volts (D. C.) for the cells. The conversion is by means of rotaries of which there are 3 : 1 x 6000 amp., 1 x 3000 amp., and 1 x 1000 amp., totalling 10,000 amps. at 150 volts = 1500 KW. The report also describes the production of 50% hydrogen peroxide and the concentration of 35% hydrogen peroxide to 80-85%. A translation of a patent application for the latter process is included together with figures 2-6. The report also deals with (1) the economics of process, (2) methods of analysis and stability testing, and (3) the purification of hydrogen peroxide by ion exchange resins and by barium salts. Flowdiagrams and drawings illustrate the text.

* PB L 79172. MCAULAY, J. and others. Manufacture of sodium and calcium permanganate. (CIOS File XXXIII-47, Item 22). May 1947. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report gives a detailed description of the production of sodium and calcium permanganate at Elektrochemische Werke, Hollriegelskreuth. The chemical process is a simple ion exchange - potassium permanganate is passed through a sodium or calcium zeolite giving sodium or calcium permanganate and potassium zeolite. The zeolite is afterward regenerated with sodium or calcium chloride. A flowdiagram and filtration arrangement are shown.

* PB L 79176. MASTERMAN, S. and CLAPP, DANIEL B. Research on preparation and reactions of nitroparaffins. (CIOS File XXXIII-41, Item 22). May 1947. Price: Microfilm-$1.00 - Photostat-$2.00
Information on this research was obtained from the interrogation of Dr. Heinreich Hopff, a research director for I. G., and Dr. Otto von Schickh who worked under the supervision of Dr. Hopff. The work of the I. G. on the nitration of paraffins was essentially the same as that patented by Commercial Solvents, the conditions of nitration and yields being almost identical. All of the work actually carried out was done on a laboratory scale, although a pilot plant had already been built to produce 20 tons per month of mixed nitroparaffins (the plant was destroyed by bombing). Some details are given on the nitration of methane, ethane, propane, butanes, and a 50-50 methane-ethane mixture. Two methods are given for the preparation of 2-nitro-2-methylpropanediol-1,3. The nitration product of this substance may be of some importance in the preparation of a new type of cordite. A translation is given of a report by Dr. Hopff and Dr. von Schickh entitled "Nitroparaffine und ihre umsetzungsprodukte", dated April 18, 1941, dealing with the reactions of the nitroparaffins. Table and flowdiagrams are included.

* PB L 77670. ROBITSCHEK, F. O. and WILCOXON, B. H. Flurobenzene manufacture. (FIAT Final Rept 998). Mar 1947. 13 p. Price: Mimeo-$0.50
This report covers the detailed manufacturing procedure for the preparation of fluorobenzene by I. G. Farbenindustrie A. G., at Höchst. The plant was designed for twenty tons per month and was the only plant in Germany. Fluorobenzene was manufactured by diazotizing aniline hydrofluoride with sodium nitrite and hydrofluoric acid and subsequent decomposition of the diazonium salt. The product was used exclusively for the manufacture of the insecticide, Gix, an insecticide analogous to DDT using fluorobenzene in place of monochlorobenzene. A diagram of the Igelit ventilating device and a flowdiagram are included.

PB L 7749-S. SAEMAN, J. F. The state of patent applications of the I.G., Wolfen, and HLR in the field of sulfite vanillin. (Supplement to PB 7749). (FIAT Final Rept 448, Supp.). Jun 1943. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document, a supplement to the main report abstracted on p. 536 of vol. 1 of the Bibliography, contains short notes on pending legal decisions regarding eleven patent applications. The German text quotes title and claim of these applications. The attached English translation of the German original is very poor.

PB L 7749-S-2. SAEMAN, J. F. Vanillin from sulfite waste liquor. (Patent registrations B 190 057 IVd/120 and B 190 643 IVd/120 English translation only). (Supplement to PB 7749). (FIAT Final Rept 448, Supp.). Jul 1940. 43 p. Price: Microfilm-$1.00 - Photostat-$2.00
This document, a supplement to the main report abstracted on p. 536 of vol. 1 of the Bibliography, deals with a description of the process, the raw materials used, the by-products obtained, and with financial details. Two German patent applications, both submitted in 1940, together with a very poor English translation are included.

*PB L 77681. U. S. FIELD INFORMATION AGENCY, TECHNICAL. Hydrogen cyanide synthesis from methane and ammonia. (Tech Bulletin T-18). Apr 1947. 1 p. Price: Mimeo: $0.25
A few notes are given on the laboratory preparation of hydrogen cyanide in a Sillimanite tube heated in an electric furnace to 1450° C. This work was the basis of German Patent 630,767, issued in 1940. Attempts to produce HCN in a regenerative type furnace were unsuccessful. Several words in line 7 of the bulletin are missing, but the meaning is clear.

* PB L 79181. VERRILL, K. J. and others. The manufacture of laboratory chemical reagents in Germany. (BIOS Final Rept 1297, Item 22). n. d. 57 p. Price: Microfilm-$2.00 - Photostat-$4.00
The report describes the preparation of laboratory chemical reagents at Riedel de Haen A. G., Hanover/Seelze and at E. Merck A.G., Darmstadt. On the whole, most of the procedures were carried out by text book methods, the equipment being in general of poor standard. An appendix (in German) gives the analytical standards abstracted from Riedel de Haen's catalogue.

* PB L 79300. WOLSTENHOLME, W. and others. I. G. Farbenindustrie A.G., Ludwigshafen, Leverkusen and Elberfeld. Formaldehyde and hexamethylenetetramine. (BIOS Final Rept 1331, Item 22). Jul 1946. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
The production of formaldehyde at I. G. Ludwigshafen and Leverkusen is described. Both plants are similar, both having been designed by Dr. Koerding of Ludwigshafen. The process is based on oxidation and dehydrogenation of methanol with a granular silver catalyst, at a temperature of 640-660° C., and is comprised of passing air saturated with a mixture of mixture of methanol and water in the ratio of 60:40 over the catalyst maintained at the stated temperature. The product is cooled and condensed, the gases scrubbed, and the whole collected and brought to a standard strength of 30% formaldehyde by weight. A flowdiagram is included. Hexamethylenetetramine is produced at I. G. Elberfeld by mixing 30% formaldehyde with 27% ammonia, cooling the mixture, evaporating, centrifuging, drying, and milling Rated plant capacity is 500 tons per month. A flow diagram of this process is also included.

METALS AND METAL PRODUCTS

PB L 74687. AACHEN, GERMANY. TECHNISCHE HOCHSCHULE. Doctors' dissertations in metallurgy. (FIAT Microfilm Reel L 113, Frames 6149-7068) 1930-1946. 920 f.
Price: Microfilm-$6.00 - Enlargement Print-$92.00
This reel was prepared by FIAT investigators in Germany. 20 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
6149-6216 PB L 74687	Hot rolling of iron-carbon alloys with more than 1.7% carbon. By Adalbert Wittmoser, 1944. Part II. (For Part I see reel L 112, PB 74680.) In German.	$7.00
6217-6366 PB L 74687	Manufacture of iron powders and cast iron powders by means of the centrifugal process particularly considering the conditions influencing sintering products. By Helmut Timmerbeil. 1944. In German.	15.00
6367-6580 PB L 74687	The automatic system in the foundry. By Georg Simirnow. 1945. In German.	21.50
6581-6614 PB L 74687	Centrifugally cast piston rings. 1944-1945. In German.	3.50
6615-6621 PB L 74687	Report on the third session of the "Arbeitsgemeinschaft Giessereiwesen der deutschen Eisenwerke A.G." at Meiderich on Jun 21, 1944. In German.	1.50
6622-6624 PB L 74687	Report on the second session at Gelsenkirchen on Apr 25, 1944. In German.	1.50
6625-6631 PB L 74687	Investigations of formed masses and layers. By Greiner. 1944. In German.	1.50
6632 PB L 74687	Tests with concrete mixtures of particularly good casting properties. By Trautmann. In German.	1.50
6633-6636 PB L 74687	Development of the concrete molding method. By "Ruhrstahl Werk Annen". In German.	1.50
6637 PB L 74687	Duplex method Bessemer converter-electric furnace. By Kleinsteuber. In German.	1.50
6638-6639 PB L 74687	Concrete molding method in France. In German.	1.50
6640-6647 PB L 74687	Method of melting and overheating in the blast furnace. Patent application by Eugen Piwowarsky, No. P 87 352 VIa/31a, Feb 9, 1944. In German.	1.50
6648-6654 PB L 74687	Method for the operation of annealing and melting furnaces. Patent application by Eugen Piwowarsky, No. P 87 434 VIa/31a, Mar 9, 1944. In German.	1.50
6655-6658 PB L 74687	Development of piston ring material. In German.	1.50
6659-6666 PB L 74687	Problems with regard to cast iron. 1946. In German.	1.50
6667-6708 PB L 74687	Controlling the development of deep drilled holes. By Willy Paar. 1936. In German.	4.50
6709-6769 PB L 74687	Mountain pressure problems in coal mining of the Ruhr region and application for mining, particularly considering flat deposits. By Anton Grosse-Boymann. 1936. In German.	6.50
6770-6848 PB L 74687	Compressed air operated power transmission in mining: Means and limits for the improvement of efficiency. By Karl Bechtold. 1930. In German.	8.00
6849-6954 PB L 74687	Advantages and disadvantages of various conveyors limit of employment, costs and influence on coal mining. By Erich Schunke. 1943. In German.	11.00
6955-7068 PB L 74687	Suitability of "Ruhr" coal for coking at high and average temperatures with particular consideration of the preparation. By A. Kircher. 1937. In German.	11.50

PB L 74680. AACHEN, GERMANY. TECHNISCHE HOCHSCHULE. Treatises and doctors' dissertations in metallurgy. (FIAT Microfilm Reel L 112, Frames 5232-6148) 1932-1944. 917 f. Price: Microfilm-$6.00 - Enlargement Print-$92.00
This reel was prepared by FIAT investigators in Germany. 40 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5232-5238 PB L 74680	The influence of metallic impurities on technical zinc electrolysis. By P. Röntgen and R. Buchkremer. In German.	$1.50
5238-5240 PB L 74680	Production and electrolysis of aluminum sulfide. By Paul Röntgen and Heinz Borchers. In German.	1.50
5240-5243 PB L 74680	Production of pure aluminum. By Paul Röntgen and Heinz Borchers. In German.	1.50
5243-5246 PB L 74680	Resistance limit-gold separation. By Heinz Borchers. 1932.	1.50
5247-5248 PB L 74680	The solidification of metal blocks. By W. Roth. In German.	1.50
5249-5252 PB L 74680	Absorption of gases in metals. Behavior of hydrogen and nitrogen with regard to aluminum. By P. Röntgen and H. Braun. In German.	1.50
5253-5255 PB L 74680	Investigation of the hydrogen content in zinc with particular consideration of electrolytic zinc. By P. Röntgen and F. Möller. In German.	1.50
5255-5258 PB L 74680	Absorption of gases in copper and aluminum. By P. Röntgen and F. Möller. In German.	1.50
5259-5280 PB L 74680	Porosity phenomena and causes in non-ferrous metal casts. By Günther Schwietzke. In German.	2.50
5281-5282 PB L 74680	Influence of heavy metals on aluminum alloys. By P. Röntgen and W. Koch. In German.	1.50
5283-5313 PB L 74680	The present state of metallurgy and probable development. By Paul Röntgen. In German.	3.00
5314-5317 PB L 74680	Problems with regard to related subjects in metallurgical engineering and metal technique. By Paul Röntgen. In German.	1.50
5317-5320 PB L 74680	Processing of ores poor in nickel. In German.	1.50
5321-5342 PB L 74680	Investigation of the thermal reduction of roasted blende. By Georg Grillo. In German.	2.50
5343-5345 PB L 74680	Influence of colloid, current density and temperature on the physical properties of cathode deposits and the current output during the bismuth analysis. By Heinz Borchers and Gerhard Stalmann. In German.	1.50
5346-5359 PB L 74680	Influence of ferrous metals on the hardening of high purity aluminum alloys. By P. Rontgen, W. Koch and F. W. Nothing. In German.	1.50
5359-5363 PB L 74680	Influence of heavy metal additions on the strength properties of aluminum-silica alloys to be hardened. By Heinrich Bauer and Helmut Winterhager. In German.	1.50
5363-5364 PB L 74680	Influence of the gas atmosphere during annealing with regard to the edge structure and bending coefficient of nickel sheets. By Helmut Winterhager. In German.	1.50
5365-5372 PB L 74680	Properties of welding conditions of Silumin, K.S. sea water alloy and Elektron. By Carl Auchter. In German.	1.50
5373-5374 PB L 74680	Investigations on the corrosion resistance of zinc sheet welds. By Helmut Winterhager. In German.	1.50
5375-5378 PB L 74680	Table of contents on treatises of the "Institut für Metallhüttenwesen und Elektrometallurgie der Technischen Hochschule, Aachen," Vol. I-IV. In German.	1.50
5379-5400 PB L 74680	Investigations on the thermal reduction of clay, sulfurization of aluminum alloys and the electrolysis of aluminum sulfide. By Paul Röntgen and Kurt Giesen. In German.	2.50
5401-5404 PB L 74680	Influence of melting conditions on the structure and mechanical properties of reselt aluminum alloys. By Paul Röntgen and Helmut Winterhager. In German.	1.50
5405-5408 PB L 74680	Influence of small lead additions on Silumin. By Heinrich Bauer and Helmut Winterhager. In German.	1.50
5408-5421 PB L 74680	Aluminum magnesium alloys containing lead. By Heinrich Bauer. In German.	1.50
5421-5423 PB L 74680	The solubility of chromium in aluminum. By Willy Koch and Helmut Winterhager. In German.	1.50
5424-5425 PB L 74680	Short testing method for determining the lead distribution in aluminum and aluminum alloys. By Helmut Winterhager. In German.	1.50
5425-5435 PB L 74680	Solubility of hydrogen in aluminum and magnesium. By Paul Röntgen and Helmut Winterhager. In German.	1.50
5435-5441 PB L 74680	Influence of beryllium on brass alloys. By Willy Koch and Paul Röntgen. In German.	1.50
5442-5454 PB L 74680	Welding of aluminum. By Stephan Hearich and Paul Röntgen.	1.50
5454-5458 PB L 74680	Heat treatment of non-ferrous metals with special consideration of light metals. By Kurt Giesen. In German.	1.50

Doctors' dissertations of the "Technische Hochschule, Aachen":

5459-5489 PB L 74680	Investigations of a cast alloy of the MgZn2 group (G 54 alloy). By O. H. C. Messner. In German.	3.50
5490-5598 PB L 74680	The effect of cast cool bodies on the density and strength of Bessemer cast steel pieces. Doctor thesis, By E. Lanzendörfer. In German.	1.50
5598A-5713 PB L 74680	Hydrogen content of aluminum and silumin castings. Dissertation by Paul E. Chrétien. In German.	2.00
5714-5788 PB L 74680	The effect of overheating during the melting process on the strength of gray cast iron depending on the carbon content. Dissertation by A. Frankenberg. In German.	7.50
5789-5866 PB L 74680	The damping capacity of cast iron. By Hans Gilgenberg. In German.	8.00
5867-5933 PB L 74680	The ordinary compound casting process for the manufacture of compound casting with copper and copper alloys and iron particularly considering the production of compound bearings. Doctor's thesis by Franz Gruss. In German.	7.00
5934-6047 PB L 74680	Practical tests with the hot-blast cupola furnace. By Marcel Bader. In German.	11.50

6048-6148 PB L 74680 — Hot rolling of iron-carbon alloys with more than 1.7% carbon. By Adalbert Mittmoser. In German. 10.50

*PB L 79447. ABBOTT, A. and others. German razor blade industry. (BIOS Final Rept 1256, Item 36). Jul 1946. 61 p. Price: Microfilm-$2.00 - Photostat-$6.00
The first part of this report consists of a general description of the industry followed by a list of firms visited. A detailed report for each of 28 firms is given covering production, types of blade process and hardening methods. Photographs, and sketches are included in Appendix A to O inclusively.

*PB L 79244. ALLEN, F. G. and others. Production of certain types of phosphor bronze, brass and light alloy castings in Germany. Composite report of interrogations of Dr. Heinrich Bauer, Dürener Metallwerke, Düren. (BIOS Final Rept 1295, Item 21, 31; Interrogation Rept 449). n. d. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report is arranged in four parts covering the following subjects: (1) Casting of phosphor bronzes for the plant and vessel industry; (2) Centrifugal casting of phosphor bronze discs for the wire drawing industry; (3) Brass casting; and (4) Aluminum alloy casting. Three sketches are included.

PB L 74596. BOSCH, ROBERT, G.M.B.H., STUTTGART, GERMANY. Experimental reports on metallurgy of steel and nonferrous metals; anodic coatings; electrolytic capacitors, etc. (FIAT Microfilm Reel K 251, Frames 2702-3386) 1938-1946. 685 f. Price: Microfilm-$6.00 - Enlargement Print-$68.50
This reel consists of 34 reports on sintering, hardness and X-ray tests, anodic coatings, electrolytic capacitors, etc. including a report in English on a Bosch injection molding process for ceramics. The individual reports, listed below will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German, except Frames 3238-3240.

Frames	Title	Price
2702-2726 PB L 74596	Sintered "Alni" steel. Oct 13, 1938. In German.	$2.50
2727-2740 PB L 74596	Comparison of Brinell, Rockwell and Vickers hardness test methods. Dec 6, 1938. In German.	1.50
2741-2750 PB L 74596	Determination of cementation and depth of casehardened layers according to the Vickers method. Mar 10, 1939. In German.	1.50
2751-2755 PB L 74596	Levensetter short method for machinability tests (ferrous and non-ferrous metals). Dec 13, 1938. In German.	1.50
2756-2767 PB L 74596	Copper brazing in a hydrogen furnace. Jan 30, 1939. In German.	1.50
2768-2774 PB L 74596	Vickers method of hardness measurement for thin sections (0.2-1.0 mm), especially in strip form. Mar 1, 1939. In German.	1.50
2775-2806 PB L 74596	Production of sintered magnets. Mar 28, 1939. In German.	3.50
2807-2824 PB L 74596	X-ray photography of pure metals and alloys. Mar 28, 1939. In German.	2.00
2825-2831 PB L 74596	Nitrided springs. Mar 4, 1940. In German.	1.50
2832-2841 PB L 74596	Structural investigation of spark plug insulators. Jul 14, 1939. In German.	1.50
2842-2859 PB L 74596	Durability of Zn alloys. Aug 15, 1939. In German.	2.00
2860-2866 PB L 74596	Cold effect on fatigue bending of light metals. Nov 14, 1939. In German.	1.50
2867-2884 PB L 74596	Effect of heat and surface treatment on the stress-corrosion of V3M contact breakers. Dec 12, 1939. In German.	2.00
2885-2891 PB L 74596	Fatigue strength of metals (Summary report). Feb 10, 1940. In German.	1.50
2892-2921 PB L 74596	Heat treatment of crucible steel. Oct 16, 1940. In German.	3.00
2922-2971 PB L 74596	Continuation of frames 2751-2755. Jan 23, 1942. In German.	5.00
2972-2980 PB L 74596	Metallographic tests to determine the depth of case in cross sections. May 21, 1941. In German.	1.50
2981-3006 PB L 74596	Spring tension. Jun 30, 1941. In German.	3.00
3007-3037 PB L 74596	Effect of the chemical composition on crucible steel. Oct 15, 1941. In German.	3.50
3038-3050 PB L 74596	Elastic flexure of flat and conical dish springs. Nov 10, 1941. In German.	1.50
3051-3059 PB L 74596	Reflection of torsion and longitudinal waves in a resilient bar, and resulting stresses. May 15, 1942. In German.	1.50
3060-3069 PB L 74596	Variations in the mechanical properties of free cutting steels due to aging, hydrogen absorption and segregation. May 27, 1942. In German.	1.50
3070-3139 PB L 74596	Application of high-voltage X-ray tubes for examination of light metals. Nov 30, 1942. In German.	7.00
3140-3159 PB L 74596	Sinter conditions for various types of iron powders. Dec 23, 1942. In German.	2.00
3160-3167 PB L 74596	X-ray measurement of internal stresses of generator shafts with various surface treatments. Feb 13, 1943. In German.	1.50
3168-3177 PB L 74596	Determination of the thickness of metallic layers by means of x-ray tubes and a tube counter device. Jun 30, 1943. In German.	1.50
3178-3201 PB L 74596	Stress calculations for a thick-walled tube or ring, subjected to internal pressure. Jul 2, 1943. In German.	2.50
3202-3224 PB L 74596	Decreasing hardness during annealing of cold-worked electrolytic copper. Jan 24, 1944. In German.	2.50
3225-3237 PB L 74596	Sinter properties of various iron powders. Dec 14, 1944. In German.	1.50
3238-3240 PB L 74596	Bosch injection molding process (for ceramics). Oct 28, 1946. In English.	1.50
3241-3292 PB L 74596	Anodic oxidation of aluminum. Mar 5, 1943. In German.	5.50
3293-3382 PB L 74596	Production and tests of electrolytic capacitors in France and Germany. 1942. In German.	9.00
3383-3385 PB L 74596	Examination of various aluminum foils to determine their suitability for electrolytic capacitors. Jul 24, 1939. In German.	1.50

3386-3388 PB L 74596 — Tests of eloxal-treated aluminum foils. Jul 24, 1939. In German. 1.50

*PB L 79180. CLARKE, S. G. Phosphating processes in Germany for the surface treatment of iron and steel. (BIOS Final Rept 1298, Item 21). Apr 1947. 77 p. Price: Microfilm-$2.00 - Photostat-$6.00
Phosphate processes were known to have been used by the Germans. Targets were visited in order to obtain first-hand information on the extent of use of the processes, the type of methods employed and the applications. The users were all employing one or another of a limited number of proprietary processes emanating from specialist firms who supplied the treatment chemicals and specific instructions for use, and provided technical information to the user. Seven specialist firms were visited and details are reported in separate sections of this report. Tables, a bibliography and a list of German patents are included.

*PB L 79238. FORD, H. Research on the mechanical working of metals: Interrogation of Dr. Ing. Werner Lueg of the Kaiser Wilhelm Institute, Dusseldorf. (BIOS Final Rept 1177, Item 21, 31; Interrogation Rept 424). n. d. 16 p. Price: Microfilm-$1.00 - Photostat-$2.00
This report consists of a number of questions asked of and answers given by Dr. Ing. Werner Lueg on two subjects: (1) Rolling mill research; and (2) Wire drawing research. A list of 45 publications on these subjects by Dr. Ing. Werner Lueg is included.

PB L 74947. FORSCHUNGSINSTITUT MANNESMANN-RÖHRENWERKE, DUISBURG-HUCKINGEN, GERMANY. Metallurgical process for the manufacture of metal and steel products. (FIAT Microfilm Reel W-5, Frames 5008-5919). 1937-1946. 912 f. Price: Microfilm-$6.00 - Enlargement print-$91.50.
This reel was prepared by FIAT investigators in Germany. 54 individual items are listed below and will be available as enlargement prints. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5008-5013 PB L 74947	Influence of longtime annealing on the notched bar toughness of low-alloy chromium steels free from molybdenum. By Mueller. Mar 18, 1944. In German.	$1.50
5014-5026 PB L 74947	Influence of different raw materials on the manufacture of 7.5cm and 8.8cm armor-piercing shells. By Müller. Mar 21, 1944. In German.	1.50
5027-5040 PB L 74947	Properties of bright drawn tubes made from a steel alloyed with C, Si, Mn, S, Cu, and metallic aluminum. By Hänlich. Apr 26, 1944. In German.	1.50
5041-5062 PB L 74947	The problem of heat treatment of welded joints on tubes from manganese-with Cr-V-steels. By Bettzieche. May 21, 1944. In German.	1.50
5063-5061 PB L 74947	Comparative examinations of converter steels. Apr 21, 1944. In German.	1.50
5062-5065 PB L 74947	Susceptibility to welding fissures of cold-drawn tubes from aircraft construction material 1604.9 (low alloy carbon steel). By Mueller., Apr 27, 1944. In German.	1.50
5066-5069 PB L 74947	Corrosion experiments with coal gas cylinders. By Richard Pusch. Jun 27, 1944. In German.	1.50
5070-5073 PB L 74947	Identical with report 5066-5069. In German.	1.50
5074-5091 PB L 74947	Tempering of steel at low hardening temperatures in order to avoid cracks formed during hardening. By R.Pusch. Aug 21, 1944. In German.	3.00
5092-5100 PB L 74947	Boiler tubes with welded longitudinal seam. By Bettzieche. Aug 18, 1944. In German.	1.50
5101-5115 PB L 74947	Examinations of dolomite and tar dolomite. By G. Naeser. Aug 30, 1944. In German.	1.50
5116 PB L 74947	Rolling hardening. Sep 5, 1944. In German.	1.50
5117-5125 PB L 74947	Welding experiments on tubes of St. 45.29 steel (carbon steel with 0.8% Mn). By Bettzieche. Sep 8, 1944. In German.	1.50
5126-5137 PB L 74947	Experiments on the problem of rolling hardening. By Pusch. Aug 29, 1944. In German.	1.50
5138-5147 PB L 74947	Explosion samples from cold-pilger-rolled 3.7 cm gun barrels. By Buchholtz-Bettzieche. In German.	1.50
5148-5160 PB L 74947	Rolling-in experiments with tubes from converter steel. By Buchholtz-Bettzieche. Nov 7, 1944. In German.	1.50
5161-5172 PB L 74947	Grain size and case-hardenability of carbon steels. By R. Pusch. Nov 4, 1944 In German	1.50
5173-5186 PB L 74947	Process for the determination of oxygen in iron and steel powder. By Gerhard Naeser. Oct 13, 1944. In German.	1.50
5187-5196 PB L 74947	Welding steels with reduced content of Mn for aircraft construction. By Buchholtz-Huenlich. Sep 25, 1944. In German.	1.50
5197-5204 PB L 74947	Comparative examinations on low alloy Mn steels (aircraft material No. 1268 and 1310) according to the "simultaneous pouring process". By Schmitz. Feb 3, 1945. In German.	1.50
5205-5217 PB L 74947	Examinations on chromium diffusion treated iron sheets and tube pieces. By Brauns. Jan 30, 1945. In German.	1.50
5218-5223 PB L 74947	Cold pilger rolled 3.7 cm gun barrels of Mn-St 50. By Buchholtz-Bettzieche. Feb 6, 1945. In German.	1.50
5224-5236 PB L 74947	Examinations of "Panzerfaust" tubes (antitank bomb). By Buchholtz-Bettzieche. Feb 19, 1945. In German.	1.50
5237-5247 PB L 74947	Production of vanadium and manganese slag according to the gorged bottom process. By Naeser. Oct 5, 1945. In German.	1.50
5248-5254 PB L 74947	Case-hardening experiments with aircraft material 1265 (low alloy Mn steel). (Frames 5249 and 5252 indistinct.) By Kraemer-Mathes. Jan 8, 1946. In German.	1.50
5255-5274 PB L 74947	Endurance tests on welded tube connections. By Buchholtz-Bettzieche-Eier. Feb 6, 1946. In German.	2.00
5275-5278 PB L 74947	Armor plate of a German tank. By Mathes. Feb 8, 1946. In German.	1.50
5279-5298 PB L 74947	Final report on experiments with steel cylinders in the municipal	

gas works at Berlin. By Pusch. Feb 14, 1946. In German. 2.00

5299-5327 PB L 74947 — The processing of converter substitute steels into seamless tubes. By Zirn. Dec 31, 1945. In German. 3.00

5328-5344 PB L 74947 — The behavior of converter steels with difficult tube-drawing. By Muenlich. Mar 26, 1946. In German. 2.00

5345-5348 PB L 74947 — The rust-preventing property of "Argillit". By Brauns. Apr 15, 1946. In German. 1.50

5349-5388 PB L 74947 — Stresses on bicycle frames. By Bettzieche-Eier. Jun 17, 1946. In German. 4.00

5389-5400 PB L 74947 — Vibration tests on socket-joints of bicycle frames. By Bettzieche-Eier. Aug 20, 1946. In German. 1.50

5401-5407 PB L 74947 — Experimental rolling with low alloy molybdenum steel. By Mueller-Schanze. Feb 28, 1938. In German. 1.50

5408-5446 PB L 74947 — Examination of silica bricks of the Rheinische Chamotte- und Dinaswerke, Mehlen-Rendorf. By Dickens-Pannen. Jul 23, 1937. In German. 3.50

5447-5460 PB L 74947 — Range of deviation in the determination of the endurance limit. By Duckwitz. Nov 15, 1937. In German. 1.50

5461-5465 PB L 74947 — Impact fatigue tests on welding samples. By Duckwitz. Nov 19, 1937. In German. 1.50

5466-5472 PB L 74947 — Experiments for obtaining a higher creep strength by heat treatment. By Speith. Mar 1938. In German. 1.50

5473-5478 PB L 74947 — Examinations of an insulating piece detached from a pipe wall. By Brauns. Sep 24, 1938. In German. 1.50

5479-5503 PB L 74947 — Refractory mortar and tamping masses. By Dickens - Pannen. Oct 1938. In German. 2.50

5504-5517 PB L 74947 — Examination of a broken tube in petroleum drilling equipment. By Mueller. Dec 31, 1938. In German. 1.50

5518-5531 PB L 74947 — Examinations on chromium plated or chromium armor clad piercing punches. By Ritter. Jan 1939. In German. 1.50

5532-5536 PB L 74947 — Examination of two broach points. By Mueller - Ritter. Mar 14, 1939. In German. 1.50

5537-5542 PB L 74947 — Rare pitch of the Ruetger Works. By Brauns. May 13, 1939. In German. 1.50

5543-5562 PB L 74947 — Influence of various cold-working methods on the notch toughness by aging of St 47 k boiler steel. By Duckwitz / Steinbrinker. May 31, 1940. In German. 2.00

5563-5595 PB L 74947 — Experiments with steel for superheaters having a chromium-molybdenum-silicon basis. By Duckwitz / Frank. Sep 23, 1940. In German. 3.50

5596-5605 PB L 74947 — Creep strength tests with manganese-silicon structural steel. By Duckwitz. Sep 1940. In German. 1.50

5606-5724 PB L 74947 — The influence of phosphorus on the metallurgy and efficiency of the duplex process. By Debuscn. Mar 31, 1941. In German. 12.00

5725-5881 PB L 74947 — The cold-drawing property of seamless tubes from soft carbon steels in dependence on metallurgical manufacturing. By Frank. Jun 1941. In German. 6.00

5882-5889 PB L 74947 — Examination of sleeve joints of water gas-welded large sized pipes from rimmed Thomas steel. By Scholz. Jul 7, 1943. In German. 1.50

5890-5919 PB L 74947 — Identical with frames 5299-5327. In German. 2.00

PB L 74947-S. FORSCHUNGSINSTITUT MANNESMAN - ROHRENWERKE, DUISBURG-HUCKINGEN, GERMANY. Metallurgical process for the manufacture of metal and steel products. (FIAT Microfilm Reel W 5, Frames 5008-5919, abstract cards). 1937-1946. 88p. Price: Microfilm-$2.00 Photostat-$6.00.
Brief abstracts of the individual items on the above reel, W 5, PB 74947, prepared by FIAT personnel in Germany.

* PB L 79295. HENDRY, D. C. The basic Bessemer plant and steel making at Reichswerke A. G., Braunschweig. (BIOS Final Rept 1199, Item 21, 31). Jun 1946. 50 p. Price: Microfilm-$1.00 - Photostat-$4.00
This report consists of four parts. The first part describes the general plant and converter plant layouts with sketches. The second part includes the converter plant design and performance with tables and sketches. The third part covers soaking pits and rolling mills. The fourth part describes the sinter plant and the Lurgi ore preparation plant with tables.

PB L 73574. I.G. FARBENINDUSTRIE AG., BITTERFELD, GERMANY. Metallurgical processes with aluminum alloys and magnesium alloys. (FIAT Microfilm Reel CC 143, Frames 1-800). 1942-1943. 800 f. Price: Microfilm-$6.00 Enlargement print-$80.00.
This reel was prepared by FIAT investigators in Germany. 70 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-7 PB L 73574.	The influence of chlorine on magnesium in the presence of hydrogen. Feb 16, 1942. In German.	$1.50
8-12 PB L 73574	Production of rudderposts for airplanes as pressed parts. Jan 16, 1943. In German.	1.50
13-23 PB L 73574	Comparative corrosion tests on aluminum-magnesium alloys which are provided with electrolytic protective coatings. By Nachtigall. Jan 13, 1943. In German.	1.50
24-34 PB L 73574	Comparative corrosion tests on aluminum-magnesium alloys, covered by different protective coats. By Nachtigall. Jan 26, 1942. In German.	1.50
35-49 PB L 73574	Stress corrosion tests on aluminum-magnesium-zinc alloys. By Vossbühler. Feb 9, 1942. In German.	1.50
40-43 PB L 73574	The influence of chromium on the stress corrosion and strength of aluminum-magnesium-zinc alloys. By Vossbühler. Jan 7, 1942. In German.	1.50
44-53 PB L 73574	Cerratically processed magnesium, its strength and corrosion-resisting	

properties. By Sauerwald. Jan 9, 1942. In German. 1.50

54-64 PB L 73574 — Production of Elektron utilizing magnesium containing calcium. By Schichtel. Jun 4, 1942. In German. 1.50

65-75 PB L 73574 — Frames No. 65-75 are identical with frames No. 54-64.

76-77 PB L 73574 — Disturbing odors occuring when sulfurizing aluminum-magnesium alloys. By Mann. Mar 26, 1942. In German. 1.50

78-98 PB L 73574 — Influence of operating procedures on the grain size of pig melts. By Kaltwasser. Mar 24, 1942. In German. 2.50

99-119 PB L 73574 — Obtaining fine grain and high mechanical values of magnesium by means of hydrogen. By Mannchen. Mar 17, 1942. In German. 2.50

120-129 PB L 73574 — Experiments aimed at the development of an aluminum-zinc alloy of higher stfength. By Vosskühler. Mar 13, 1942. In German. 1.50

130-154 PB L 73574 — Quarterly report on the operation of the foundry and pressing plant of the light metal factory at Aken/Elbe. By Mannchen. Jan 8, 1942. In German. 2.50

155-165 PB L 73574 — Investigations concerning the age-hardening speed of aluminum-copper-magnesium alloys with different contents of iron, silicon, and manganese. By Mannchen. Apr 4, 1942. In German. 1.50

166-172 PB L 73574 — Comparative welding tests of aluminum-magnesium-zinc and aluminum-magnesium-manganese sheets. By Renner. Dec 19, 1942. In German. 1.50

173-177 PB L 73574 — Possibility of saving calcium fluoride by the application of salts poor in calcium fluoride in the refining of aluminum-magnesium melts. By Achenbach. Jun 18, 1942. In German. 1.50

178-182 PB L 73574 — Stress corrosion tests on aluminum-magnesium-zinc sheets which were produced according to the new hetrogenization method. By Sichel. Jun 3, 1942. In German. 1.50

183-198 PB L 73574 — Spot welding on aluminum-magnesium alloys. By Schönberg. May 30, 1942. In German. 2.00

199-212 PB L 73574 — Comparative deep drawing tests on different aluminum-magnesium alloys. By Schönberg. May 15, 1942. In German. 1.50

213-215 PB L 73574 — Supervision of the hardening of light metal parts with the impact hardness tester. By Buchmann. May 12, 1942. In German. 1.50

216-227 PB L 73574 — Corrosion of aluminum-magnesium die casting alloys. By Nachtigall. May 8, 1942. In German. 1.50

228-231 PB L 73574 — Experiments on the applicability of an aluminum-copper alloy as rivet material. By Mannchen. Apr 23, 1942. In German. 1.50

232-238 PB L 73574 — Pickling of different aluminum-magnesium and aluminum-magnesium-zinc alloys. By Nachtigall. Apr 8, 1942. In German. 1.50

239-252 PB L 73574 — Rapid determination of aluminum in aluminum-magnesium alloys by means of potentiometric titration. By Mannchen. Feb 15, 1943. In German. 1.50

253-262 PB L 73574 — Experiments on the stress corrosion of aluminum-magnesium alloys. By Mannchen. Feb 22, 1943. In German. 1.50

263-297 PB L 73574 — Development of a lubricating grease for the deep drawing of sheets. By Nachtigall. Aug 14, 1943. In German. 3.50

298-305 PB L 73574 — Experiments on the utilization of melts produced from light metal chips in molding foundries. By Achenbach. Mar 26, 1943. In German. 1.50

306-309 PB L 73574 — Strength tests on aluminum-magnesium castings which were melted from scrap. By Achenbach. Sep 6, 1943. In German. 1.50

310-311 PB L 73574 — The influence of a shortened heat treatment on the strength of aluminum-magnesium-zinc alloys. By Vosskühler. Mar 23, 1943. In German. 1.50

312-320 PB L 73574 — Investigations of aluminum-magnesium-zinc alloys (Hydronalium 43). By Vosskühler. Apr 9, 1943. In German. 1.50

321-325 PB L 73574 — Rolling tests on cast plates of light metal. By Vosskühler. Mar 11, 1943. In German. 1.50

326-329 PB L 73574 — Investigations of different aluminum-magnesium-zinc alloys (Hydronalium 43) for their applicability as rivet materials. By Mannchen. Mar 8, 1943. In German. 1.50

330-336 PB L 73574 — Tests on parts of an American Douglas airplane. By Rosenkranz. Mar 10, 1943. In German. 1.50

337-340 PB L 73574 — Tests on the upsetting ability of rivets of an aluminum-magnesium-zinc alloy (Hydronalium 43). By Mannchen. Mar 5, 1943. In German. 1.50

341-379 PB L 73574 — Structure and strength tests on aluminum-copper-magnesium alloys. By Rosenkranz. Mar 2, 1943. In German. 4.00

380-386 PB L 73574 — The influence of the electrolytic oxidation on the corrosion-resisting quality of aluminum-magnesium-zinc alloys. (Hydronalium 43). By Vosskühler. Feb 8, 1943. In German. 1.50

387-396 PB L 73574 — The influence of lubricating greases on the deep drawing of sheets. By Renner. In German. n.d 1.50

397-399 PB L 73574 — Investigation of an aluminum-magnesium-zinc die pressing (Hydronalium 43). By Petri. Feb 17, 1943. In German. 1.50

400 403-435 PB L 73574 — Experiments on surface protection of magnesium with selenious acid. By Strascnill. Feb 17, 1943. In German. 3.50

401 PB L 73574 — Translation of an American report about selenium and tellurium as surface protection for light metals. (The Metal Industry "Vol-LXI No. 6, for Aug 7, 1942). In German. 1.50

436-468 PB L 73574 — The influence of various elements on the strength and stress corrosion properties of aluminum-magnesium-zinc alloy sheet material (Hydronalium 43). By Petri. Jan 25, 1943. In German. 3.50

469-472 PB L 73574 — Determination of the chlorine content in fluoride welding fluxes. By Nachtigall. Dec 22, 1942. In German. 1.50

473-477 PB L 73574 — Test of aluminum-magnesium-zinc alloys (Hydronalium 43) on their applicability in the tropics. By Voss-Kühler. Dec 22, 1942. In German. 1.50

478-494 PB L 73574 — Tests for the determination of the necessary cuttings of light metal ingots and of the extrusion material produced therefrom. By Rosenkrans. Nov 28, 1942. In German. 2.00

495-507 PB L 73574 — Investigations on cast and rolled light metal plates. By Voss-Kühler. Nov 26, 1942. In German. 1.50

508-512 PB L 73574 — Rolling tests on plated light metal sheets. By Voss-Kühler. Nov 9, 1942. In German. 1.50

513-522 PB L 73574 — Investigations on aluminum-magnesium alloys (hydronalium 9), which were produced according to the new heterogenization method. By Voss-Kühler. Dec 22, 1942. In German. 1.50

523-528 PB L 73574 — Tests aimed at the grain refinement of magnesium-hydrogen alloys. By Sauerwald. Dec 12, 1942. In German. 1.50

529-540 PB L 73574 — The removal of magnesium from the outer layers of aluminum-magnesium sheets. By Voss-Kühler. Dec 31, 1942. In German. 1.50

541-546 PB L 73574 — The fatigue tensile strength of different light metal alloys. By Buchmann. Dec 15, 1942. In German. 1.50

547-562 PB L 73574 — Strength and hardness of the aluminum-magnesium-zinc alloys (Hydronalium 43). By Siebel. Dec 21, 1942. In German. 2.00

563-580 PB L 73574 — The influence of different elements on strength and corrosion properties of aluminum-magnesium-zinc alloys (Hydronalium 43). By Siebel. Dec 9, 1942. In German. 2.00

581-617 PB L 73574 — Quarterly report about the control of the foundry and pressing plant of the light metal factory at Aken. By Mannchen. Dec 31, 1942. In German. 4.00

618-630 PB L 73574 — Tests on the influence of aluminum on the properties of magnesium - hydrogen alloys. By Mannchen. Jan 2, 1943. In German. 1.50

631-633 PB L 73574 — Refining of light metal waste. By Siebel. Feb 16, 1943. In German. 1.50

634-644 PB L 73574 — The influence of various gases on aluminum-magnesium casting. By Siebel. Dec 29, 1942. In German. 1.50

645-682 PB L 73574 — The influence of various organic and inorganic materials on the structure of aluminum-magnesium castings. By Siebel. Dec 22, 1942. In German. 4.00

683-687 PB L 73574 — The influence of cold working on the coarse-grained and fine-grained light metals. By Voss-Kühler. Dec 8, 1942. In German. 1.50

688-694 PB L73574 — Pickling of aluminum-magnesium alloys (Elektron) with dilute nitric acid. By Nachtigall. Dec 3, 1942. In German. 1.50

695-709 PB L 73574 — Tests on the creep strength of aluminum-magnesium-zinc alloys (Hydronalium 43). By Buchmann. In German. Dec 2, 1942. 1.50

710-718 PB L 73574 — Recrystallization and stress corrosion of aluminum-magnesium-zinc alloys (hydronalium 43). By Voss-Kühler. Dec 14, 1942. In German. 1.50

719-729 PB L 73574 — Determination of hydrogen in magnesium. By Sauerwald. Sep 26, 1942. In German. 1.50

730-732 PB L 73574 — Use of light metal die casting wastes. By Achenbach. Jan 5, 1942. In German. 1.50

733-777 PB L 73574 — Quarterly report on the operation of the foundry and pressing plant of the light metal factory at Aken. By Mannchen. Jun 16, 1943. In German. 4.50

778-784 PB L 73574 — Internal stresses of thick pressed bars of aluminum-magnesium-zinc pressed material (Hydronalium 43). By Buchmann. Oct 19, 1942. In German. 1.50

785-787 PB L 73574 — Tests on the influence of several simultaneously added elements on magnesium-hydrogen-silicon alloys. By Mannchen. Nov 20, 1942. In German. 1.50

788-798 PB L 73574 — The influence of the silicon-iron-manganese content on the strength properties of aluminum-magnesium-zinc alloys (Hydronalium 43). By Mannchen. Nov 30, 1942. In German. 1.50

799-800 PB L 73574 — The influence of copper on the corrosion behavior of hot age-hardened aluminum-magnesium-zinc pressed materials (Hydronalium 43). By Petri. Nov 12, 1942. In German. 1.50

This report is continued on Frames 801-802 of Reel CC 144 (PB L 73575).

PB L 73574-S. I. G. FARBENINDUSTRIE A. G., BITTERFELD, GERMANY. Metallurgical processes with aluminum alloys and magnesium alloys. (FIAT Microfilm Reel CC 143, Frames 1-800, abstract cards) 1942-1943. 70 p. Price: Microfilm-$2.00 - Photostat-$5.00

Brief abstracts of the individual items on the above reel, CC 143, PB 73574, prepared by FIAT personnel in Germany.

PB L 73575. I. G. FARBENINDUSTRIE A.G., BITTERFELD, GERMANY. Metallurgical processes with Al alloys and Mg alloys. (FIAT Microfilm Reel CC 144, Frames 801-1600). 1942-1943. 799 f. Price: Microfilm-$6.00 - Enlargement print-$80.00.

This reel was prepared by FIAT investigators in Germany. 78 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
801-802 PB L 73575	The influence of copper on the corrosion behavior of hot age-hardened aluminum-magnesium-zinc pressed materials (Hydronalium 43). Nov 12, 1942. By Petri. In German.	

(These frames are a continuation of frames 799-800 of reel CC 143 (PB L 73574). $1.50

803-844 PB L 73575 — Experiments with aluminum-magnesium-zinc-alloy Hy 43. By F. Rosenkrans. Nov 3, 1942. In German. 4.50

845-866 PB L 73575 — Experiments with aluminum-magnesium-zinc alloys. Heat treatment of the alloy HY 43. Oct 20, 1942. By Rosenkrans. In German. 2.50

867-869 PB L 73575 — The influence of prolonged annealing on the occurrence of shear cracks in aluminum-copper magnesium rivet alloys. By Mannchen. Oct 12, 1942. In German. 1.50

870-873 PB L 73575 — Influence of a final drawing of the production of rivet wire on the basis of aluminum-copper-magnesium upon the occurrence of shear cracks. By Mannchen. Oct 12, 1942. In German. 1.50

874-879 PB L 73575 — Influence of increased zinc upon strength and compressibility under pressure of Hy 51 and Hy 9 (die-casting). By K. Achenbach. Oct 13, 1942. In German. 1.50

880-915 PB L 73575 — Experiments with aluminum-magnesium-zinc alloy Hy 43. By Petri. Nov 18, 1942. In German. 4.00

916-941 PB L 73575 — Experiments with Al, Mg, Zn alloys. Influence of various scrap additions on the strength, corrosion, and tension corrosion behavior of Hy 43 pressed and rolled material. By Petri. Oct 15, 1942. In German. 2.50

942-944 PB L 73575 — The influence of zinc on the properties of the alloy Ig dur 30. By H. Vosskühler. Oct 7, 1942. In German. 1.50

945-976 PB L 73575 — Supplementary experiments on some aluminum cast alloys, especially on Hydronalium. By G. Siebel. Oct 15, 1942. In German. 3.50

977-987 PB L 73575 — Second semi-annual report on Hy 43 ingot casting. By K. H. Mann. Oct 13, 1942. In German. 1.50

988-991 PB L 73575 — Tests of a sheet of the "Deutschen Zirkon G.m.b.H.". By G. Siebel. Oct 14, 1942. In German. 1.50

993-994 PB L 73575 — Experiments with aluminum-magnesium-zinc alloys, concerning cold age-hardening in the recrystallized state. By G. Siebel, and H. Vosskühler. Oct 14, 1942. In German. 1.50

995-1000 PB L 73575 — Internal stresses of thick pressed bars from Igedur 26. By W. Buchmann. Oct 21, 1942. In German. 1.50

1001-1009 PB L 73575 — Internal stresses of thick pressed bars from Igedur 26 and F 41. By W. Buchmann. Nov 12, 1942. In German. 1.50

1010-1023 PB L 73575 — Observations on fatigue strength properties of Hy 43. By W. Buchmann. Jul 28, 1942. In German. 1.50

1024-1031 PB L 73575 — Investigations of aluminum-magnesium-zinc alloys. Strength tests on the section $Al_2Mg_7Zn_5$. By W. Vosskühler. Jul 30, 1942. In German. 1.50

1032-1033 PB L 73575 — The processing of pure distilled magnesium and its mechanical and corrosive properties. By P. Sauerwald. May 1, 1942. In German. 1.50

1034-1037 PB L 73575 — Further tests on the influence of the hydrogen content on magnesium-zinc chill mold cast alloys. By W. Mannchen. Oct 9, 1942. In German. 1.50

1038-1063 PB L 73575 — Comparison of different casting methods in producing Igedur-26-sheets. By H. Vosskühler. Oct 6, 1942. In German. 2.50

1064-1067 PB L 73575 — Supplements to test reports. By K. Rosenkrans. Oct 23, 1942. In German. 1.50

1068-1076 PB L 73575 — Experiments with aluminum-magnesium-zinc alloys. The influence of the quenching velocity on the strength and tension corrosion behavior of Hy 43 sheet material. By Petri. Oct 5, 1942. In German. 1.50

1077-1080 PB L 73575 — Testing of the usability of AZ 855 ingots produced from press waste material or chips produced in the foundry at Staßfurt. By K. Rosenkrans. Jul 13, 1942. In German. 1.50

1081-1102 PB L 73575 — Investigation of addition agents and whole annealing on aluminum-zinc alloys Hy 46 and Hy 43. By Petri. Jul 13, 1942. In German. 2.50

1103-1136 PB L 73575 — Quarterly report on the current plant supervision of the foundry and pressing plant at Aken for the second quarter 1942. By W. Mannchen. Jul 11, 1942. In German. 3.50

1137-1139 PB L 73575 — Investigations of aluminum-copper-magnesium ingots. By W. Mann. Jul 3, 1942. In German. 1.50

1140-1144 PB L 73575 — Cracking of spar flange sections, produced by Messerschnitt. By H. Vosskühler. Jul 14, 1942. In German. 4.50

1145-1155 PB L 73575 — Tests with aluminum-magnesium-zinc alloys. By Petri. Jul 17, 1942. In German. 1.50

1156-1175 PB L 73575 — Temperature study. Junghans method, VLW method, production of water-chilled cast ingots. Oct 8, 1942. In German. 2.00

1176-1180 PB L 73575 — Tests on the properties of alloy Ig 30 as a rivet material. By W. Mannchen. Aug 11, 1942. In German. 1.50

1181-1184 PB L 73575 — The application of the "Bo quick soldering process" on forgings and rough castings. By W. Wachtigall. Aug 5, 1942. In German. 1.50

1185-1190 PB L 73575 — The soldering of Hydronalium. Jun 2, 1942. In German. 1.50

1191-1206 PB L 73575 — Tests with aluminum-magnesium-zinc alloys. By Petri. Jul 27, 1942. In German. 2.00

1207-1213 PB L 73575 — Tests on the properties of the alloy Ig 30 as rivet material. By W. Mannchen. Jun 19, 1942. In German. 1.50

1214-1219 PB L 73575 — Tests for treating Elektron for the purpose of rust protection. By P. Sauerwald, and E. Wachtigall. Jul 1, 1942. In German. 1.50

1220-1225 PB L 73575 — Processing of alloys containing zinc and zirconium in forging. By F. Sauerwald. Jul 2, 1942. In German. 1.50

1226-1231 PB L 73575 — Tests of the aluminum-magnesium-zinc alloys Hy 43 as rivet material. By W. Mannchen. Jun 7, 1943. In German. 1.50

1232-1236 PB L 73575 — The use of the aluminum-magnesium-zinc alloys Hy 43 as rivet material. By W. Mannchen. Jun 7, 1942. In German. 1.50

1237-1254 PB L 73575 — Influence of various aluminides like chromium, vanadium, titanium, and zinc on the strength properties and the tension corrosions of Hy 43. By G. Siebel. May 27, 1943. In German. 2.00

1255-1267 PB L 73575 — Investigations of corrosion behavior of riveted aluminum-magnesium-zinc alloy Hy 43 pressed material. By G. Siebel. Jun 21, 1943. In German. 1.50

1268-1275 PB L 73575 — Investigations of aluminum-magnesium-zinc alloys. Tension corrosion test of aircraft material FLW 3425.4 and 3425.9 in current production. By G. Siebel. Jun 16, 1943. In German. 2.00

1276-1286 PB L 73575 — Experiments for the explanation of tension corrosions in aluminum alloys. By H. Vosskühler. Sep 2, 1943. In German. 1.50

1287-1313 PB L 73575 — Systematic welding experiments for removal of welding cracks in Hydronalium wrought alloys. By K. Renner. Jun 17, 1943. In German. 3.00

1314-1320 PB L 73575 — Stability of the internal stress in Hy 43 pressed bars. By W. Buchmann. Jun 24, 1943. In German. 1.50

1321-1329 PB L 73575 — Pressure treatment of Elektron metal with alkaline solutions. By K. Wachtigall. Jun 23, 1943. In German. 1.50

1330-1341 PB L 73575 — The solubility of bismuth in magnesium. By H. Vosskühler. Jun 18, 1943. In German. 1.50

1343-1351 PB L 73575 — Endurance limit of strong Hy 43 pressed bars. By W. Buchmann. Mar 19, 1943. In German. 1.50

1352 PB L 73575 — Fatigue limit of a "VLW" pressed bar. Aluminum-magnesium-zinc alloy F 41. By W. Buchmann. Jun 25, 1943. In German. 1.50

1353-1359 PB L 73575 — Experiments with aluminum-magnesium-zinc alloys. By H. Vosskühler. Jun 17, 1943. In German. 1.50

1360-1362 PB L 73575 — Experiments on Al-Mg-Zn alloys. Stress corrosion of thin-walled extruded shapes of Hy 43 aluminum-magnesium-zinc alloy. By G. Siebel. Jul 6, 1943. In German. 1.50

1363-1369 PB L 73575 — Investigation of an English aluminum-magnesium-zinc alloy. By G. Siebel. Jun 29, 1943. In German. 1.50

1370-1389 PB L 73575 — The influence of the pH values and the corrosive solution on tension corrosion and intercrystalline corrosion. By H. Vosskuhler. Aug 28, 1943. In German. 2.00

1390-1394 PB L 73575 — On the development of the aluminum-magnesium-zinc or aluminum-magnesium-zinc-copper alloys. By G. Siebel. May 20, 1943. In German. 1.50

1395-1399 PB L73575 — Influence of chromium and the recrystallization temperature of water cooled and recrystallized Hy 43 ingots on the properties of pressed material. By G. Siebel. May 26, 1943. In German. 1.50

1400-1406 PB L 73575 — Increase of the creep strength of Hy 43 by raising the silicon content. By H. Vosskühler. Jun 5, 1943. In German. 1.50

1407-1410 PB L 73575 — Tension corrosion tests on the section Al-$Al_2Mg_3Zn_3$. By H. Vosskühler. Apr 30, 1943. In German. 1.50

1411-1426 PB L 73575 — Investigations of the deformability of the alloys AS 986-W and AS 986-S (magnesium alloys with 7 % aluminum). By W. Rosenkranz. Apr 28, 1943. In German. 2.00

1429-1432 PB L 73575 — Testing of a Junc 211 crank case of remelt Al-Si-Cu-Mg alloy. By K. Achenbach. Apr 20, 1943. In German. 1.50

1433-1443 PB L 73575 — Internal stresses of die-pressed test billets of the aluminum-magnesium-zinc alloys Ingedur 26, Ingedur 30 and Hydronal 43. By W. Buchmann. May 7, 8, 1943. In German. 1.50

1444-1448 PB L 73575 — Tests on the magnesium-hydrogen effect. By F. Sauerwald. May 2, and Jul 7, 1943. In German. 1.50

1449-1470 PB L 73575 — Investigations of low percentage magnesium-manganese-aluminum alloys. By G. Siebel. Jun 13, 1943. In German. 2.50

1471-1477 PB L 73575 — Systematic welding tests to eliminate weld cracking of hydronalium wrought alloys. By K. Renner. Jul 3, 1943. In German. 1.50

1478-1481 PB L 73575 — Investigations of high temperature stability and creep strength of the aluminum-magnesium-zinc alloy Hy 43. By H. Vosskühler. Sep 23, 1943. In German. 1.50

1482-1488 PB L 73575 — Testing of three crank cases of remelted aluminum-silicon-copper-magnesium alloy. By K. Achenbach. Jun 25, 1943. In German. 1.50

1489-1493 PB L 73575 — Phosphate protective layer on iron in light metal assemblies. By K. Wachtigall. Jun 30, 1943. In German. 1.50

1494-1498 PB L 73575 — Tests on the treatment of Elektron for the purpose of corrosion protection. By F. Sauerwald. Sep 25, 1943. In German. 1.50

1499-1500 PB L 73575 — The influence of stirring on the fineness of grain and the properties of light metal melts. By F. Sauerwald. Jul 21, 1943. In German. 1.50

1501-1506 PB L 73575 — The treatment of magnesium alloy with argon. By F. Sauerwald. Jun 29, 1943. In German. 1.50

1507-1509 PB L 73575 — See frame 1444.

1510-1512 PB L 73575	The extraction of hydrogen from magnesium alloys by chlorination. By F. Sauerwald. Jun 30, 1943. In German.	1.50
1513-1535 PB L 73575	Influence of the quenching conditions on the tension corrosion of aluminum-magnesium-zinc alloy Hy 43. By G. Siebel. Jul 20, 1943. In German.	2.50
1536-1540 PB L 73575	Investigations on aluminum-magnesium-zinc alloys. By J. Petri. Aug 29, 1943. In German.	1.50
1541-1545 PB L 73575	"Ickillon", a substitute for boric acid? By G. Schichtel. n.d. In German.	1.50
1546-1550 PB L 73575	The electrometric titration of aluminum in Elektron alloys. By D. Mannchen. Aug 4, 1943. In German.	1.50
1551-1578 PB L 73575	Resistance to creep strength in Elektron alloys. By H. Vosskühler. Sep 9, 1943. In German.	3.00
1579-1590 PB L 73575	Investigation of aluminum-magnesium-zinc alloys. By H. Vosskühler. Apr 3, 1943. In German.	1.50
1591-1600 PB L 73575	Resistance to tension corrosion of Hy 43-pressed sections. By W. Rosenkranz. Sep 12, 1943. In German.	1.50

PB L 73575-S. I.G.FARBENINDUSTRIE A.G., BITTERFELD, GERMANY. Metallurgical processes with Al alloys and Mg alloys. (FIAT Microfilm Reel CC 144, Frames 801-1600, abstract cards). 1942-1943. 78 p. Price: Microfilm-$2.00 - Photostat - $6.00.
Brief abstracts of the individual items in the above reel CC 144, PB 73575, prepared by FIAT personnel. In German.

PB L 73940. INSTITUT FÜR METALLURGIE UND METALLKUNDE AN DER TECHNISCHEN HOCHSCHULE, MUNICH, GERMANY. Fine iron wires and thin iron coatings. (FIAT Microfilm Reel A 61, Frames 1-6) Jul 1945. 6 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
This reel contains a report made by Professor H. Borchers of the Institute for Metallography at the Munich College of Engineering on the precipitation of metals from the gaseous phase. The report describes in detail the production of metallic coatings and the development of metallic threads of the smallest cross section by means of separating them from metallic compounds, especially carbonyls, and from metallic gases. In addition to other uses, the products were to serve as screening material as for the protection of submarines against radar. The reel contains a one-page summary in English and five pages of German text which, however, do not specify any further technical details.

*PB L 79442. JAHN, C. A. H. and others. Report on instrument wire industry and diamond dies in Germany. (BIOS Final Rept 1357, Item 9). Oct 1946. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00
The eight manufacturers investigated in this report are responsible in the aggregate for supplying approximately 90% of Germany's war time superfine resistance wire requirements. A detailed report is given for each of the eight factories, covering production methods, annealing, tolerances, dies, enameling, measurements, etc. Tables giving standards, and illustrations are included.

PB L 74641. KRUPP, FRIEDRICH, WERKE, ESSEN, GERMANY. Research reports on steel metallurgy production of ferro-nickel, vanadium, alkali metal phosphates, etc. (FIAT Microfilm reel L 25, Frames 3506-4392). 1935-1945. 886 f. Price: Microfilm-$6.00 - Enlargement print-$89.00.
This reel consists of 91 reports from the Krupp Research Institute on various kinds of steels, production of nickel ferro-nickel vanadium, and alkali metal phosphates, nickel matte, etc. The individual reports, listed below will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German.

Frames	Title	Price
3506-3536 PB L 74641	Investigations on the possible thermal separation of nickel and iron with special consideration of the Frankenstein nickel deposits and theoretical bases. 1935. In German.	$3.50
3537-3539 PB L 74641	Vaporization tests of ferro-nickel at the "Nordeutsche Hütte." Apr 1937. In German.	1.50
3540-3547 PB L 74641	Theoretical bases for nickel vaporization. Jun 1937. In German.	1.50
3548-3571 PB L 74641	Vaporization of ferro-nickel at the Thomas plant of the Friedrich - Alfred Hütte, Rheinhausen. n.d. In German.	2.50
3572-3576 PB L 74641	Melting points of ferrous oxide - chromous oxide slag. Feb 4, 1938. In German.	1.50
3577-3582 PB L 74641	Decarbonization of nickel and chromium-bearing crude iron. Jul 21, 1938. In German.	1.50
3583-3588 PB L 74641	Theoretical bases for ferro-nickel production. May 5, 1939. In German.	1.50
3589-3597 PB L 74641	Desulfurization of crude nickel matte. May 23, 1939. In German.	1.50
3598-3601 PB L 74641	Patent application concerning the production of nickel and of ferro-nickel alloys. Jun 28, 1939. In German.	1.50
3602-3606 PB L 74641	Metallography of specimens from the Schlesische Nickelwerke Frankenstein. Aug 4, 1939. In German.	1.50
3607-3610 PB L 74641	Desulfurization of nickel matte. Oct 11, 1939. In German.	1.50
3611-3620 PB L 74641	Viscosity measurements on Celebes and Frankenstein puddle balls. Nov 30, 1939. In German.	1.50
3621-3631 PB L 74641	Viscosity measurements of slag from Frankenstein and Greek ores. Jul 15, 1940. In German.	1.50
3632-3633 PB L 74641	Correspondence on processing of nickel matte. Nov 23, 1939. In German.	1.50
3634-3638 PB L 74641	Patent application S 136819/40c, on electrolytic separation and production of metals of the Fe group from aqueous solutions. Apr 21, 1939. In German.	1.50
3639-3649 PB L 74641	Experiments on the fusion electrolysis of nickel from nickel sulfate-sodium chloride mixtures. Sep 26, 1940. In German.	1.50
3650-3659 PB L 74641	Production of high-percentage ferro-nickel from Celebes ores. Oct 4, 1940. In German.	1.50
3660-3667 PB L 74641	Fusion electrolysis of copper-nickel matte. Oct 21, 1940. In German.	1.50

3668-3670 PB L 74641 — Correspondence on iron volatilization. Nov 1940. In German. 1.50

3671-3675 PB L 74641 — Carbonyl structure of iron, copper, and nickel. Nov 20, 1940. In German. 1.50

3676-3677 PB L 74641 — Removal of nickel from crude iron by treatment with ferric sulfide-aluminum sulfide slag. Nov 11, 1940. In German. 1.50

3678-3689 PB L 74641 — Reduction experiments with Celebes nickel ores. Nov 19, 1940. In German. 1.50

3690-3696 PB L 74641 — Production of ferro-nickel from Celebes ores. Jan 23, 1941 In German. 1.50

3697-3712 PB L 74641 — Continuation of frames 3660-3667 Mar 21, 1941. In German. 2.00

3713-3725 PB L 74641 — Electrolytic refining of copper-nickel matte. May 12, 1941. In German. 1.50

3726-3730 PB L 74641 — Separation of nickel and iron by means of a magnesia wash. Sep 2, 1941. In German. 1.50

3731-3738 PB L 74641 — Metal volatilization in the reduction of Fe_2O, MnO, Cr_2, SiO_3, CuO, NiO, $FePO_4$, and V_2O_5. Nov 15, 1941. In German. 1.50

3739-3742 PB L 74641 — Melting nickel blooms in the Krupp IV a furnace. Nov 27, 1941. In German. 1.50

3743-3747 PB L 74641 — Nickel and magnesium production from Frankenstein ores, according to Prof. Müller's process. Jul 17, 1942. In German. 1.50

3748-3750 PB L 74641 — Solution experiments with Frankenstein ores. May 22, 1943. In German. 1.50

3751-3757 PB L 74641 — Melting tests with Lokris nickel ores. May 17, 1943. In German. 1.50

3758-3759 PB L 74641 — Chlorination of garnieritic Frankenstein nickel ores. Sep 6, 1944. In German. 1.50

3760-3766 PB L 74641 — Preparation of sodium phosphates from ferrophosphorus. Dec 21, 1939. In German. 1.50

3767-3785 PB L 74641 — Possibilities of recovering vanadium basic slag. n.d. In German. 1.50

3786-3791 PB L 74641 — Methods for recovery of P, V, and Mn from basic slag. Apr 18, 1940. In German. 1.50

3792-3799 PB L 74641 — Data on pig-iron production costs. Apr 11, 1940. In German. 1.50

3800-3811 PB L 74641 — Production of alkali phosphates from ferrophosphorus. Jun 19, 1941. In German. 1.50

3812-3823 PB L 74641 — Experiments on the production of alkali phosphates at the Norddeutsche Hütte A. G. Bremen. Jul 1941. In German. 1.50

3824-3859 PB L 74641 — Experiments on the production of alkali phosphate slag by the reaction of phosphatic iron with alkali sulfates in a converter. Jan 19, 1942. In German. 4.00

3860-3865 PB L 74641 — Reaction of Fe_2P with Na_2SO_4 and Na_2CO_3. May 5, 1942. In German. 1.50

3866-3888 PB L 74641 — Experiments on the production of alkali phosphate slag. Mar 10, 1943. In German. 2.50

3889-3893 PB L 74641 — Continuation of frames 3800-3811. May 27, 1944. In German. 1.50

3894-3900 PB L 74641 — Experiments on the production of trisodium phosphate from ferrophosphorus. By Metallgesellschaft, A. G. Feb 21, 1944. In German. 1.50

3901-3902 PB L 74641 — Alkali phosphate experiments. Aug 3, 1944. In German. 1.50

3903-3906 PB L 74641 — Production of calcium phosphate. Jan 18, 1945. In German. 1.50

3907-3917 PB L 74641 — Reaction of cast iron with cupola slag. Dec 21, 1940. In German 1.50

3918-3925 PB L 74641 — Patent application M103 137/18b concerning the production of high grade cast iron. May 10, 1941. In German. 1.50

3926-3934 PB L 74641 — Oxidation of cast iron in cupola melts. Jul 13, 1942. In German. 1.50

3935-3959 PB L 74641 — Non-metallic separation in centrifugally cast cylinder liners. Dec 22, 1941. In German. 2.50

3960-3967 PB L 74641 — Durability of cast steel. Feb 24, 1937. In German. 1.50

3968-3971 PB L 74641 — Durability of crankshaft castings. Apr 9, 1937. In German. 1.50

3972-3976 PB L 74641 — Durability of cast Cr-Mo steel. Aug 18, 1947. In German. 1.50

3977-3980 PB L 74641 — Notched-bar toughness of cast armor at low temperatures. Feb 14, 1938. In German. 1.50

3981-3984 PB L 74641 — Notched-bar toughness and metallography of cast Ni-steel. Feb 13, 1939. In German. 1.50

3985-3987 PB L 74641 — Comparative properties of centrifugally cast and wrought steel collars, under gear stresses. Jun 1, 1939. In German. 1.50

3988-3995 PB L 74641 — Tests of St 52 steel. Jan 17, 1940. In German. 1.50

3996-4003 PB L 74641 — Strength properties of tempered St 52. Feb 5, 1940. In German. 1.50

4004 PB L 74641 — Cancelled.

4005-4008 PB L 74641 — Thermal yield point of St 52 free of copper. Feb 14, 1940. In German. 1.50

4009-4012 PB L 74641 — Physical properties of St 52. Feb 20, 1940. In German. 1.50

4013-4016 PB L 74641 — Effect of hardening on the strength properties of St 52 and St 47K. Feb 22, 1940. In German. 1.50

4017-4026 PB L 74641 — Effect of alloying elements on the hardenability of low carbon structural steels. Feb 27, 1940. In German. 1.50

4027-4032 PB L 74641 — Continuation of frames 4005-4008. Apr 18, 1940. In German. 1.50

4033-4035 PB L 74641 — Continuation of frames 4017-4026. May 24, 1940. In German. 1.50

4036-4052 PB L 74641 — BC 324 as a substitute for KU33 steel. May 27, 1940. In German. 1.50

4053-4056 PB L 74641 — 5, 10, and 30-mm. St 52 test sheets for the Wilhelmshaven Navy Yard. Jun 12, 1940. In German. 1.50

4057-4060 PB L 74641 — Structural steel with a minimum strength of 60 kg/mm^2. Jul 19, 1940. In German. 1.50

4061-4063 PB L 74641 — Strength properties of an annealed 30-mm Mn-V steel sheet. Aug 15, 1940. In German. 1.50

4064-4065 PB L 74641 — Strength properties of 20 mm St 52 sheets. Aug 29, 1940. In German. 1.50

4066-4074 PB L 74641 — Tensile tests of St 47 and St 52 at various temperatures. May 29, 1940. In German. 1.50

4075-4078 PB L 74641 — Temper tests of St 52 with vanadium and titanium (St 60). Sep 9, 1940. In German. 1.50

4079-4091 PB L 74641 — Mechanical properties of St 60. Sep 11, 1940. In German. 1.50

4092-4097 PB L 74641 — Effect of annealing on the notched-bar toughness at the edge and in the core of thick St 52 profiles. Sep 13, 1940. In German. 1.50

4098-4109 PB L 74641 — Cold yield limit of St 47K. Sep 14, 1940. In German. 1.50

4110-4112 PB L 74641 — Rivet steel for St 60. Nov 18, 1940. In German. 1.50

4113-4126 PB L 74641 — German Railways acceptance of heavy St 52 sections. Feb 25, 1941. In German. 1.50

4127-4144 PB L 74641 — Test sections of St 60 with minimum yield limit of 40 kg/mm^2 and 20% elongation. Mar 20, 1941. In German. 2.00

4145-4155 PB L 74641 — Strength properties of 20mm sheets of manganese-vanadium and manganese-Titanium St 60 steel. Jul 23, 1941. In German. 1.50

4156-4171 PB L 74641 — Notched-bar toughness hardness, and metallography of 2 St 52 melts. Aug 20, 1941. In German. 2.00

4172-4176 PB L 74641 — Investigation of 20mm P465 sheets of satisfactory and unsatisfactory notched-bar toughness. Sep 20, 1941. In German. 1.50

4177-4182 PB L 74641 — Effect of the cooling rate on the aging of coarse-grained and fine-grained St 52 steel. Sep 20, 1941. In German. 1.50

4183-4194 PB L 74641 — Data tables on mechanical properties of BCT 326 sheet metal. Oct 16, 1941. In German. 1.50

4195-4218 PB L 74641 — Mechanical properties of U-sections of St 52. Nov 17, 1941. In German. 2.50

4219-4223 PB L 74641 — Test structural steel castings with 1 and 2% nickel contents. Nov 18, 1941. In German. 1.50

4224-4229 PB L 74641 — Continuation of frames 4172-4176 Mar 18, 1942. In German. 1.50

4230-4274 PB L 74641 — Mechanical properties of specimens from three manganese-vanadium and manganese-titanium steel melts. Dec 18, 1942. In German. 4.50

4275-4281 PB L 74641 — Annealing effect on the mechanical properties of 240x 11 mm elliptical sections of Izett 52 steel. Feb 10, 1944. In German. 1.50

4282-4298 PB L 74641 — Investigations of the mechanical properties of F22 aircraft steel, manufactured by the Italian Savoia Marchetti firm. Nov 7, 1939. In German. 2.00

4299-4343 PB L 74641 — Development of an aircraft steel with a weld strength of 100 Kg/mm^2. Apr 9, 1940. In German. 4.50

4344-4348 PB L 74641 — Aircraft steel with a weld strenght of 100 Kg/mm^2; effect of vanadium on the retention of hardness. May 24, 1940. In German. 1.50

4349-4354 PB L 74641 — Soft annealing of P517 (Izett 100) (for seamless pipe). Mar 5, 1941. In German. 1.50

4355-4392 PB L 74641 — Aircraft steel with a tensile strength of more than 100 Kg/mm^2. Mar 16, 1941. In German. 4.00

PB L 74625. KRUPP, FRIEDRICH, WERKE, ESSEN, GERMANY
Research reports on the metallurgy of iron, steel, nickel, and vanadium. (FIAT Microfilm reel L 51, Frames 5757-6586). 1936-1944. 830 f. Price: Microfilm-$6.00 - Enlargement print-$83.50.
This reel consists of 85 reports on the metallurgy of iron, steel, nickel, and vanadium, including the minutes of conferences of the Verein Deutscher Eisenhuttenleute, Dusseldorf and a report on atomic theory. The individual reports, listed below, will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German.

Frames	Title	Price
5757-5759 PB L 74625.	Separation of granulated metal from vanadium slag. Nov 10, 1938. In German.	$1.50
5760-5766 PB L 74625.	Magnetic properties of vanadium-bearing slag. Jul 17, 1938. In German.	1.50
5767-5772 PB L 74625	Chlorination of Salzgitter (low grades) ores. Apr 1939. In German.	1.50
5773-5791 PB L 74625	Edwin steel process. n.d. In German.	2.00
5793-5800 E PB L 74625	Rotary kiln (drawings). Apr 1939.	3.50
5801-5841 PB L74625	Continuation of frames 5767-5772. 1937-1939. In German.	4.50
5842-5879 PB L 74625	Continuation of frames 5773-5791 n.d. In German.	4.00
5880-5894 PB L 74625	Coke combustion in O_2- air mixtures (test results). Jan 11, 1943. In German.	1.50
5895-5900 PB L 74625	Formation of hydrogen phosphide in the extraction of vanadium crude iron. Jul 16, 1941. In German.	1.50
5901-5938 PB L 74625	Limits of the Bohr model atom and the Schrödinger theory. n.d. In German.	4.00
5939-5943 PB L 74625	Effect of other metals on the A_3 transformation of iron. Mar 28, 1941. In German.	1.50
5944-5947 PB L 74625	Recovery of manganese, iron, and vandium from basic slag. Jan 18, 1944. In German.	1.50
5948-5950 PB L 74625	Experiments in the chlorination of vanadium slag, ore, scrap, ash, etc. Nov 19, 1943. In German.	1.50
5951-5954 PB L 74625	Minutes of the conference of the chemical committee, Nov 19, 1943. In German.	1.50

5955-5962 PB L 74625 — Minutes of the conference of chemico-technical and chemico-metallurgical subcommittees. Mar 22, 1944. In German. 1.50

5963-5966 PB L 74625 — Continuation of frames 5944-5947 Apr 14, 1943. In German. 1.50

5967-5970 PB L 74625 — Proposals for increased manganese utilization in the Thomas process. Apr 14, 1943. In German. 1.50

5971-5972 PB L 74625 — Proposal for a dual chamber recuperative steel furnace. Apr 10, 1943. In German. 1.50

5973-5980 PB L 74625 — Methods for additional smelting of acid ores. Apr 14, 1943. In German. 1.50

5981-5992 PB L 74625 — Minutes of the 4th conference on metallurgical problems. Apr 13, 1944. In German. 1.50

5993-5999 PB L 74625 — Minutes of the conference of chemico-technical and chemico-metallurgical subcommittees. May 5, 1944. (on vanadium manganese and iodine extraction, etc.). May 5, 1944. In German. 1.50

6000-6001 PB L 74625 — Preparation of basic and vanadium slag. May 5, 1944. In German. 1.50

6002-6007 PB L 74625 — Metallurgical and raw material problems in vanadium extraction. May 5, 1944. In German. 1.50

6008-6010 PB L 74625 — Coking of vanadium slag during roasting and its prevention. May 5, 1944. In German. 1.50

6011-6015 PB L 74625 — Conventional preparation of vanadium slag. May 5, 1944. In German. 1.50

6016-6017 PB L 74625 — Vanadium extraction by ore chlorination. May 5, 1944. In German. 1.50

6018-6020 PB L 74625 — Vanadium extraction from vanadium-bearing ore and slag by means of acids. May 5, 1944. In German. 1.50

6021-6023 PB L 74625 — Chemical dressing of basic slag. May 5, 1944. In German. 1.50

6024-6028 PB L 74625 — Extraction of Mn-rich raw materials for ferromanganese production. May 5, 1944. In German. 1.50

6029-6038 PB L 74625 — Desulfurization with soda ash. May 5, 1944. In German. 1.50

6039-6040 PB L 74625 — Wet extraction of vanadium slag with diluted HCl. n.d. In German. 1.50

6041-6059 PB L 74625 — Experiments on the production of tungsten carbide by the action of reducing and carburizing gases on tungstic acid. 1942. In German. 2.00

6060-6072 PB L 74625 — Chlorination of iron ores. Nov 2, 1942. In German. 1.50

6073-6079 PB L 74625 — Reaction velocity for the CO_2 absorption power of lime briquettes. Jul 1939. In German. 1.50

6080-6084 PB L 74625 — Continuation of frames 5767-5772. Nov 4, 1937. In German. 1.50

6085-6099 PB L 74625 — Fusion electrolysis of nickel-copper matte. Mar 21, 1941. In German. 1.50

6100-6111 PB L 74625 — Experiments on nickel extraction from acid solutions of nickel sulfate by electrolysis on a mercury cathode in a magnetic field. Oct 28, 1940. In German. 1.50

6112-6123 PB L 74625 — Decomposition of vanadium ores by roasting without fluxes, according to French Patent 823548. Jun 14, 1939. In German. 1.50

6124-6144 PB L 74625 — Subsequent treatment of vanadium slag. Jul 6, 1939. In German. 2.50

6145-6148 PB L 74625 — Roasting and leaching of V-bearing slag from the Friedrich-Alfred Hütte. n.d. In German. 1.50

6149 PB L 74625 — Chlorination of thermit slag (vanadium slag). Jun 4, 1943. In German. 1.50

6150-6156 PB L 74625 — Precipitation of granular vanadic acid. Oct 21, 1942. In German. 1.50

6157-6167 PB L 74625 — Extraction of vanadic acid from enriched vanadium slag. Jul 1938. In German. 1.50

6168-6173 PB L 74625 — Vegetable-oil viscosimeter. Nov 27, 1942. In German. 1.50

6174-6176 PB L 74625 — Various examination methods for core binding agents and vegetable-oils. Oct 3, 1942. In German. 1.50

6178-6180 PB L 74625 — Solution experiments with Frankenstein ores. May 22, 1943. In German. 1.50

6181-6198 PB L 74625 — Ni and Mg extraction from garnierite Frankenstein ores according to the Müller process. Jun 12, 1942. In German. 2.00

6199-6207 PB L 74625 — Magnesia from serpentine. Apr 21, 1943. In German. 1.50

6208-6219 PB L 74625 — Sintering and leaching of vanadium slag. May 31, 1940. In German. 1.50

6220-6229 PB L 74625 — Continuation of frames 6157-6167. May 10, 1940. In German. 1.50

6230-6239 PB L 74625 — Solution of vanadic acid (sinter tests). Oct 18, 1939. In German. 1.50

6240-6243 PB L 74625 — Continuation of frames 6157-6167. Jul 26, 1939. In German. 1.50

6244-6248 PB L 74625 — Roasting tests with saltpeter. n.d. In German. 1.50

6249-6279 PB L 74625 — Continuation of frames 6157-6167 Jan 1939. In German. 3.50

6280-6292 PB L 74625 — Alkaline roasting of vanadium slag. 1943. In German. 1.50

6293-6309 PB L 74625 — Vanadium production at Krupp plants. Jan 26, 1939. In German. 2.00

6310-6313 PB L 74625 — Lubrication tests with oil emulsions. Nov 16, 1942. In German. 1.50

6314-6325 PB L 74625 — Photometric nickel analysis method for alloyed steels (diacetyldioxime hypobromite method). 1944. In German. 1.50

6326 PB L 74625 — Al_2O_3 and Al PO_4 analysis (steel chips). Mar 18, 1944. In German. 1.50

6327-6335 PB L 74625 — Methods for Al analysis of projectile steels. Dec 1943. In German. 1.50

6336-6357 PB L 74625 — Crystallization and graphitization of cast iron; literature survey. May 25, 1938. In German. 2.50

6358-6366 PB L 74625 — Effect of the crucible material on the freezing of cast iron. Jun 28, 1938. In German. 1.50

6367-6372 PB L 74625 — Crystallization of Fe-C-Si alloys. Jun 25, 1938. In German. 1.50

6373-6389 PB L 74625 — Effect of hydrogen annealing on gray cast iron. Oct 19, 1938. In German. 2.00

6390-6396 PB L 74625 — Effect of H-content on the hardenability of unalloyed tool steels. Dec 6, 1938. In German. 1.50

6397-6401 PB L 74625 — Effect of H on Fe-C alloys. Aug 17, 1939. In German. 1.50

6402-6409 PB L 74625 — Effect of cerium on cast iron. Aug 21, 1939. In German. 1.50

6410-6417 PB L 74625 — Hydrogen stability of cast iron and nitralloy steel. Aug 19, 1940. In German. 1.50

6418-6428 PB L 74625 — Investigations of cast iron with and without Al additions. Sep 4, 1940. In German. 1.50

6429-6443 PB L 74625 — Effect of H-on cast iron. Nov 4, 1940. In German. 1.50

6444-6451 PB L 74625 — Effect of a Ni-addition on the properties of nitriding castings. May 9, 1936. In German. 1.50

6452-6455 PB L 74625 — Transformation processes in G.W.K 90 roll stock. Jul 1, 1938. In German. 1.50

6456-6466 PB L 74625 — Thermal expansion and transformation processes in G.W.K 90 rollstock. Aug 15, 1938. In German. 1.50

6467-6479 PB L 74625 — Thermal expansion and transformation processes in chilled roll stock. Oct 25, 1938. In German. 1.50

6480-6485 PB L 74625 — Investigation of a G.W.K 100 roll section. Feb 28, 1939. In German. 1.50

6486-6490 PB L 74625 — Malleable iron with various P-contents. Apr 10, 1941. In German. 1.50

6491-6498 PB L 74625 — Grain boundary fractures during fatigue tests. (A-Ni-Mo-V cast steel). Aug 25, 1938. In German. 1.50

6499-6503 PB L 74625 — V2A cast alloys with silicon and phosphorus additions. Jan 8, 1938. In German. 1.50

6504-6509 PB L 74625 — Soft annealing tests with FF128 and FF228 centrifugal castings. Nov 6, 1939. In German. 1.50

6510-6523 PB L 74625 — Nitriding of austenitic castings. Jan 25, 1939. In German. 1.50

6524-6527 PB L 74625 — Heat treatment of austenitic centrifugal castings. May 11, 1939. In German. 1.50

6528-6543 PB L 74625 — Nitriding of centrifugal castings. Jun 18, 1940. In German. 2.00

6544-6546 PB L 74625 — Zinger's experiments on the stress - expansion law for cast iron. Mar 22, 1937. In German. 1.50

6547-6558 PB L 74625 — Comparative examination of tractor wheels manufactured by International Harvester Co. and Krupp. Mar 23, 1937. In German. 1.50

6559-6586 PB L 74625 — Investigations on the behavior of cast iron during tensile and transverse bending tests. Nov 2, 1937. In German. 3.00

*PB L 79440. LEADBEATER, C. J. and FORD, V. G. Iron powders and sintered components. (BIOS Final Rept 1223, Item 21). Mar-Apr 1945. 106 p. Price: Microfilm-$3.00 - Photostat-$8.00

In this report the Hametag process, the D. P. G. disc process, the Rohseisensunder (R.Z) process are described in detail, also notes given on the Vogt & Lins processes. A detailed report is also given on thirteen manufacturers of iron powder visited in order to obtain information on methods used and production. Tables, charts, graphs, sketches, microphotographs and photographs are included.

*PB L 79243. MACGREGOR, N. and others. German wedge wire industry. (BIOS Final Rept 1195, Item 21, 31). Sep - Oct 1945. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00

This investigation covers visits made to ten firms in the British Zone of Germany as well as interviews with Lt. Col. Starr of the M.G.C.C. and various officials of the trade and industry divisions of the military government. The information obtained is given in individual reports on each of the factories visited, with an outline of conclusions and a summary of the position of the industry as far as could be ascertained.

*PB L 79436. THOMAS, E. and others. German umbrella industry. (BIOS Final Rept 1304, Item 36). Jul, Nov 1945. 59 p. Price: Microfilm-$2.00 - Photostat-$4.00

This report is arranged in two sections. Section I covers umbrella assembly and section II umbrella sticks and handles. A detailed report is given for each of 26 factories visited.

PB L 74647. VEREINIGTE LEICHTMETALLWERKE, HANNOVER, GERMANY. Aluminum alloys. (PIAT Microfilm Reel L-20, Frames 5471-6304). 1942-1946. 833 f. Price: Microfilm-$6.00 - Enlargement print-$83.50.

This reel consists of 60 research reports on the production, heat treatment, physical properties and tests of aluminum alloys. The individual reports, listed below, will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this reel. In German.

Frames	Title	Price
5471-5489 PB L 74647	Structural investigation of castings. (photographs only). n. d. In German.	$2.00
5490-5494 PB L 74647	Etching tests for macrostructural investigations of Al - Zn-Mg alloys. Apr 13, 1942. In German.	1.50
5495-5516 PB L 74647	Effect of the original state on the thermal hardening of 17/11. aircraft alloy. Apr 23, 1942. In German.	2.50
5517 PB L 74647	Thermocouple for measurement of bath temperatures. Apr 21, 1942. In German.	1.50
5518-5590 PB L 74647	Effect of overheating "Hondur". Jun 23, 1942. In German.	7.50
5591-5596 PB L 74647	Corrosion tests of "Pantal" bars. May 7, 1942. In German.	1.50
5597-5600 PB L 74647	Age stability of wedge-like strips with slag inclusions. May 6, 1942. In German.	1.50
5601-5602 PB L 74647	Fatigue strength of 63/03 welds. May 11, 1942. In German.	1.50
5603-5609 PB L 74647	Investigations on casting of FLW 3211 alloy. Jul 10, 1942. In German.	1.50

5610-5611 PB L 74647 — Effect of slight changes in Zn and Mg content on the mechanical properties of 20/42 alloy. May 20, 1942. In German. 1.50

5612-5617 PB L 74647 — Hardenability curves for 1 mm. sheets of 20/42 alloy. May 20, 1942. In German. 1.50

5618-5628 PB L 74647 — "Constructal" castings for Junkers. May 21, 1942. In German. 1.50

5629-5635 PB L 74647 — Comparison of "Tordal "and "Pantal" produced by other manufacturers with VLW alloys. May 22, 1942. In German. 1.50

5636-5644 PB L 74647 — Determination of 0.2 yield limit based on total extension. Jun 1, 1942. In German. 1.50

5645-5649 PB L 74647 — Endurance tests of forged bars of Al Zn - Mg alloy. May 30, 1942. In German. 1.50

5660-5661 PB L 74647 — Corrosion and stress corrosion of "Constructal" in benzol and mineral oil. Jun 9, 1942. In German. 1.50

5662-5683 PB L 74647 — Investigation of zinc analysis methods, for Al - Zn - Mg alloys. Jul 5, 1942. In German. 2.50

5684-5690 PB L 74647 — Effect of annealing conditions on the stress-corrosion behavior of "Constructal" sheets. Jul 1, 1942. In German. 1.50

5691-5692 PB L 74647 — Precipitation of aluminum phosphate for aluminum analysis in Al-Mg alloys. Jul 1, 1942. In German. 1.50

5693-5714 PB L 74647 — Extent of cold working necessary following hot rolling and soft annealing. To insure recrystallization (plated 17/69 alloy). Jul 3, 1942. In German. 2.50

5715-5721 PB L 74647 — Effect of the heating rate during annealing on the hardenability of "Constructal". Jul 2, 1942. In German. 1.50

5722-5731 PB L 74647 — Behavior of bondur during hot rolling and soft annealing. Jul 14, 1942. In German. 1.50

5732-5737 PB L 74647 — Variations in the deformation properties of Pantal sheets during the hardening process. Jul 29, 1942. In German. 1.50

5738-5746 PB L 74647 — Investigation of patent application H 155 282 by Althof and Matthaes on the "Application of a malleable Al alloy for structural members exposed to high temperatures and corrosive attacks." (for aircraft radiators). Aug 11, 1942. In German. 1.50

5747-5790 PB L 74647 — Effect of the degree of forging and the casting method on the properties of propellers made of RR 56 alloy. Aug 20, 1942. In German. 4.50

5791-5793 PB L 74647 — Continuation of frames 5618-5628. Sep 7, 1942. In German. 1.50

5794-5797 PB L 74647 — Resistance to stress corrosion of cast flat "Contructal" bars. Sep 10, 1942. In German. 1.50

5798-5804 PB L 74647 — Metallographic tests of a polished "Constructal" specimen. Sep 7, 1942. In German. 1.50

5805-5816 PB L 74647 — Cause of fibrous structure of "Constructal" bars. Sep 24, 1942. In German. 1.50

5817-5829 PB L 74647 — Effect of preheating before, solution treatment on recrystallization and its relation to the extent of rolling (bondur sheet). Oct 26, 1942. In German. 1.50

5830-5834 PB L 74647 — Porosity in "Magnesium" bars. Oct 2, 1942. In German. 1.50

5835-5855 PB L 74647 — Investigation of a Bur-roll ingot from the Karl Berg firm, Eveking. Nov 13, 1942. In German. 2.50

5856-5921 PB L 74647 — Hot-rolling of 17/11 and 17/69 alloys. Nov 27, 1942. In German. 7.00

5922-5928 PB L 74647 — Variations in yield limit analysis. Nov 25, 1942. In German. 1.50

5929-5939 PB L 74647 — Effect of the charge on KS411 castings. Nov 30, 1942. In German. 1.50

5940-5955 PB L 74647 — Notched-bar toughness of casting materials at various temperatures. Dec 16, 1942. In German. 2.00

5956-5964 PB L 74647 — Production of Cu 30 ingots by the water-casting method. Dec 15, 1942. In Germany. 1.50

5965-5969 PB L 74647 — Deep-drawing tests at the Weser-Flug firm, Delmenhorst. Jan 12, 1943. In German. 1.50

5970-5991 PB L 74647 — "Constructal" with increased Cu content. Feb 8, 1943. In German. 2.50

5992-5996 PB L 74647 — Experiment sheet metals produced on cast iron and on steel rolls at the Opel firm. Feb 18, 1943. In German. 1.50

5997-6037 PB L 74647 — Tests of sheets and girder fish plates of Ky 43 alloy. Feb 18, 1943. In German. 4.50

6038-6041 PB L 74647 — Accuracy of indentation tests. Feb 19, 1943. In German. 1.50

6042-6046 PB L 74647 — Stress-corrosion of heat-hardened sheet metals. Feb 20, 1943. In German. 1.50

6047-6054 PB L 74647 — Effect of various types of heat treatment on the endurance strength of BSS alloys. Mar 26, 1943. In German. 1.50

6055-6057 PB L 74647 — Duration of the intermediate bath in the gradual quenching of "Constructal" sheets. Feb 23, 1943. In German. 1.50

6058-6070 PB L 74647 — Continuation of frames 5970-5991. Feb 24, 1943. In German. 1.50

6071-6075 PB L 74647 — Effect of the gauge and rate of cooling on the stress-corrosion behavior of "Constructal" sheets. Mar 1, 1943. In German. 1.50

6076-6088 PB L 74647 — Stability of water-cast ingots (bondur). Mar 8, 1943. In German. 1.50

6089-6097 PB L 74647 — Effect of the annealing operation on the structure of KSS. Mar 15, 1943. In German. 1.50

6098-6166 PB L 74647 — Effect of "spiders" on the local strength of spar girder shapes. Mar 29, 1943. In German. 7.00

6167-6168 PB L 74647 — Black pickling of light metal ingots with Na OH to accelerate heating. Mar 12, 1943. In German. 1.50

6169-6171 PB L 74647 — Effect of surface condition on sheet metal deformation. Mar 16, 1943. In German. 1.50

6172-6175 PB L 74647 — Soft annealing of Al-Mg 35. May 11, 1944. In German. 1.50

6176-6185 PB L 74647 — Processing KL 29 alloy. May 22, 1944. In German. 1.50

6186-6224 PB L 74647 — Influence of solution-treatment temperature on the properties of rivet wire. Jun 10, 1944. In German. 1.50

6225-6273 PB L 74647 — Pure sheet aluminum with a silumin core and silumin plating. Jun 14, 1944. In German. 5.00

6274-6292 PB L 74647 — Various production methods for control sticks of FLW 3211 aircraft alloy. Jun 30, 1944. In German. 2.00

6293-6297 PB L 74647 — Influence of the alloy type and ingot shape on the rupture tendency of water-cast roll ingots, and its elimination. Jun 12, 1944. In German. 1.50

6298-6304 PB L 74647 — Al-Mg-Si "Dental" alloys. (hardness and corrosion tests). May 23, 1946. In German. 1.50

MINERALS AND MINERAL PRODUCTS

PB L 74657. AACHEN, GERMANY. TECHNISCHE HOCHSCHULE. Dissertations, reports and articles on mining. (FIAT Microfilm Reel L 114, Frames 7069-7920) 1936-1941. 852 f. Price: Microfilm-$6.00 - Enlargement Print-$85.50

This reel was prepared by FIAT investigators in Germany. 18 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
7069-7233 PB L 74657	Investigation on the possibility of direct measuring of mineral stresses for the use in open-work mining. By Walter Vogeno. n.d. In German.	$16.50
7234-7352 PB L 74657	The motion of single grain particles on fast vibrating surfaces. By C. H. Biedendieck. 1941. In German.	12.00
7353-7582 PB L 74657	Development, operation and economy of Hoesch steel convey belts particularly for subterranean mining. By Werner Schmick. 1936. In German.	23.00
7583-7725 PB L 74657	Development of marsh gas in coal mining. By Leo J. Ruland. n.d. In German.	14.50
7726-7728 PB L 74657	Capacity and task of coal mining in the Ruhr region considering the new coal and energy economy. By Buskühl. n.d. In German.	1.50
7729-7733 PB L 74657	Modern tasks and problems of mining in the "Ruhr". By C. H. Fritzsche. n.d. In German.	1.50
7733-7736 PB L 74657	Development and importance of refining coal in modern times. By F. Müller. 1939. In German.	1.50
7736-7739 PB L 74657	Control and protective means for electric current in underground mining. By F. Kesselring. n.d. In German.	1.50
7740-7748 PB L 74657	Operation of conveyor installations and other engines in mining particularly considering the A C squirrel cage induction motor. By H. Koch. n.d. In German.	1.50
7749-7754 PB L 74657	Work of the "Vereinigung für Steinkohlenschwelung" By H. Weittenhiller. n.d. In German.	1.50
7755-7758 PB L 74657	The fire of 1938 in the "Consolidation" mine. By F. Luyken. n.d. In German.	1.50
7758-7763 PB L 74657	Steel pillars in mining. By A. Haarmann. n.d. In German.	1.50
7763-7768 PB L 74657	Organizational and economic problems using steel pillars in mining. By H. U. Ritter. n.d. In German.	1.50
7768-7771 PB L 74657	Space arrangement in mining. By K. Oberste-Brink. 1938. In German.	1.50
7771-7775 PB L 74657	Present state and future of air conditioning in hot mines. By H. Fritzsche. n.d. In German.	1.50
7776-79201 PB L 74657	Investigation of friction conditions of resinous bearings of different composition. n.d. In German.	15.50
7920j-7920p PB L 74657	Portable Vickers hardness tester. By Heinrich Arend. In German.	1.50
7920q-7920z PB L 74657	The influence of manganese, nickel, vanadium, and carbon on the wearing property of steels after air cooling. By Heinrich Arend. n.d. In German.	1.50

* PB L 79185. ANDERSON, R.C.B. and DANI, A. de. Report on glass fibre industry in Germany. (BIOS Final Rept 1140, Item 22). May 1947. 94 p. Price: Microfilm-$2.00 - Photostat-$7.00

The German glass fiber industry has developed enormously during the war years and glass fibers were used to replace asbestos wherever possible. The report describes the manufacturing processes in use in German plants. Glass wool is manufactured by the Owens and Hager process; staple fibers are produced by the Owens process, Gossler process and the Schuller process; continuous fibers are produced by the Owens process. In addition to the above processes, two new processes are reported - one is the manufacture of stone wool (Gerresheimer and Grunzweig und Hartmann) which is done by the Owens process and the modified Owens process, the other is development work on the production of fibers from water glass (Gerresheimer, Ettlingen). Nothing radically new was found in the German glass fiber industry, apart from the new processes mentioned above, but many details in lay-outs, equipment and processing are of interest. The quality of the fibers themselves is not very good. This is due to the tendency of using the coarsest possible fiber for each application in order to get the maximum output from each unit. The quality of the textile processed goods is very high, due to the great care which is put into the subsequent steps of working up the fibers. The quality of the materials like rigid sections or sound insulation materials is also high because of the excellent binder used. Photographs, drawings, and sketches illustrate the report.

* PB L 20532-T. EITEL, W. and others. Regular intergrowth of synthetic phlogopite with hydrous mica. (Translation of PB 20532). (FIAT Final Rept 749). Mar 1946. 31 p. Price: Mimeo-$1.00

The investigation of some tests of synthetic Phlogopite has shown, that besides the mica, other crystals occur, which were found to be other various members of the hydrous mica group, and among which, Chondrodite predominated. Individuals with changing composition, were intergrown with each other, according to the (001) plane. The crystals were tabular, according to surface (010), which always laid parallel to the (001) surface of Phlogopite; the surface (001) was also formed well and sharp. There are two Chondrodite-Klinomica formations, somewhat different from each other; the formation of the first group consists of simple crystals and twinning, which are formed somewhat isometrically; the formation of the second group consists of stricted crystals strongly bound to the direction (100). The twinning growth was observed to follow two rules: the first follows according to (001), the second according to a plane which forms an angle with the (001) plane of 60°, and which has various symbol designations for the various members of the hydrous mica group. Diagrams illustrate the crystallographic structure. A bibliography is included. This report is a translation of one of a series of three reports (FIAT Reports 747,748 and 749, PB 20530, PB 20531, and PB 20532 respectively, v. 1, p. 984, this Bibliography) by Dr. W. Eitel and co-workers of the Kaiser Wilhelm Institute for Silicate Research at Berlin - Dahlem and Ostheim, Rhoen, Germany.

PB L 52025. GERMANY. ARBEITSSTAB CHEMISCHE FORSCHUNG UND ENTWICKLUNG. Reichsberichte für chemie July 1944. First meeting of the cooperative group on asbestos, Dec. 11 and 12, 1942. Jul 1944. 25 p. Price: Microfilm-$1.00 - Photostat-$2.00
The above report is abstracted in this issue of the Bibliography under "Chemicals and Allied Products - Miscellaneous Chemicals."

*PB L 77671-S. MERKER, LEON. The synthetic stone industry of Germany, supplementary. (Drawings of Leverkusen Verneuil furnace and muffle). (FIAT Final Rept 1001, supp 1). May 1947. 4 p. Price: Mimeo-$0.25
This supplement consists of three drawings; 1. The "Edelsteinschmelze" (Verneuil furnace now in use at Leverkusen); 2. Details of the refractory muffle; and 3. Verneuil furnace at Wiedes Carbidwerk. For PB 77671 see Volume 7, page 213 and for PB 77671-S2, see volume 7, page 331, of this Bibliography.

PB L 79505. MONTGOMERY, EARLE T. Ceramic materials for application in the design of jet propelled devices. Quarterly report, Aug - Oct, 1946. (Ohio State Univ Res Foundation Rept 18A). Dec 1946. 5 p. Price: Mimeo-$0.25
This quarterly progress report mentions studies made on the following subjects: metal bonded solid ceramic bodies; coatings of metal-bonded and glass-bonded ceramic grain; enamels or glass coatings; rocket liners and nozzles; and mechanical design.

*PB L 81836. U. S. FIELD INFORMATION AGENCY, TECHNICAL. Diamond powder for grinding and polishing. (Tech Bulletin T-22). Apr 1947. 3 p. Price: Mimeo-$0.25
This report describes a process developed by Osram Gesellschaft, Berlin, for separating diamond powder into fractions of uniform particle sizes. This process was developed for use in grinding and polishing of dies for wire drawing. Description of various methods for the different fractions are given together with appropriate tables showing times required.

*PB L 81835. U. S. FIELD INFORMATION AGENCY. TECHNICAL. Metal coating and soldering of ceramic parts. (Tech Bulletin T-52). Jun 1947. 1 p. Price: Mimeo-$0.25
The method for metal coating ceramics in order to solder other parts to it, as used by: Stemag, Steatite A.G., Lauf, Bavaria, Germany, is described in this report.

*PB L 77682. U. S. FIELD INFORMATION AGENCY, TECHNICAL. Mica substitute. (Tech Bulletin T-17). Apr 1947. 1 p. Price: Mimeo-$0.25
The difficulties involving the use of ceramic masses containing the TiO2 group as mica substitues are noted very briefly. Not much else is noted in this brief report.

ORDNANCE AND ACCESSORIES

PB L 80850. DESCRIPTION and assembly instructions for device B.V. 2C 50/VI. (Bomb release for two cylindrical bombs, Type VI). n. d. 36 p. Price: Microfilm-$1.00 - Photostat-$3.00
This document contains the description and assembly instructions for B.V. 2 C 50/VI bomb release mechanism for two type VI 50 kg. bombs. Photographs and drawings included. In German.

PB L 81034. GOLDEN, S. Interim ballistic studies. Final report. (OSRD Rept 5773). Dec 1945. 35 p. Price: Microfilm-$1.00 - Photostat-$3.00
Part I of this report is an introduction; Part II is reprinted from a memorandum "Tests on 3/8-in. by 1/8-in. powder for the rocket grenade", by S. Golden and H. E. Leap, Dec 31, 1942; Part III is reprinted from "The estimation of pressure-time relations obtaining in powder-driven rockets" by S. Golden, NDRC Report A-153 (OSRD-1303), which derives theoretical relations for the analysis of pressure-time data given in Part II. The data are tabulated and the observed burning time plotted as a function of K, the ratio of the powder burning surface area to the nozzle throat area. A bibliography is included. The report was prepared by Allegany Ballistics Laboratory, George Washington University.

PB L 81033. GROSS, G. L. and others. Theory and applications of $\int_0^x e^{-x^2}\,dx$ and $\int_0^x e^{-p^2y^2}\,dy \int_0^y e^{-x^2}\,dx$.

Part II: Applications to the exterior ballistic theory of rockets. Final report. (OSRD Rept 5877) Jan 1946. 23 p. Price: Microfilm-$1.00 - Photostat-$2.00
The formulae of rocket ballistics in this report are given for use with the tables of Part I (OSRD Rept 5861, PB 11430, abstracted in v. 1, p. 904, this Bibliography). With each formula is tabulated the parts of it which can be found in various references of the bibliography. In the glossary is a list of symbols and their equivalents in terms of the functions of Part I. A derivation of the formulas for the effects of wind, and a bibliography are included. The report is from Allegany Ballistics Laboratory, George Washington University.

*PB L 81540. GRUEN, A. Detonators, small arms cartridges, and small, cables. (BIOS Final Rept 1247, Item 2). Nov-Dec 1946. 19 p. Price: Microfilm-$1.25 - Photostat-$2.00
This report contains detailed information of the factories visited. The subjects investigated were: cables, cartridges, detonators, initiating explosives, and powder.

*PB L 79297. MAYES, H. A. and SMITH, C. M. Testing of permitted explosives (wettersprengstoffe) at the testing gallery, Dortmund-Derne, and the experimental mine, Tremonia Str., Dortmund. (BIOS Final Rept 1266, Item 2, 21). n. d. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report contains miscellaneous information on safety aspects in the use of industrial explosives in German coal mines. It deals, in part, with such matters as safety in manufacture and use, storage properties and methods of testing industrial explosives, and the use of acetylene insofar as it is considered to be an explosive at increased pressure.

PB L 80784. U. S. BUREAU OF AERONAUTICS. Controller, gunsight aero 28. (NAVAER Specification SR-136, rev.; 9Mc1). Feb 1947. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

PHOTOGRAPHIC AND OPTICAL GOODS (INCLUDING PHOTOGRAPHIC PROCESSING)

*PB L 81625. BIGO, H. J. and CANTLE, L. G. H. The Leica camera. (BIOS Final Rept 1436, Item 9). Nov 1946. 17 p. Price: Microfilm-$1.25 - Photostat-$2.00
This report covers constructional details of the Leica camera with particular reference to finish, assembling and testing. It was not intended to cover the manufacture of lenses but some details of the construction of lenses were noted and are included in this report. Report also contains details of a new wage rate system which was put in effect Oct.1, 1946.

*PB L 79236. CHILTON, L. V. Further investigation of Agfa Filmfabrik (photographic plant), Wolfen, near Leipzig. (with notes on related targets) (BIOS Final Rept 1355, Item 22). 1946. 110 p. Price: Microfilm-$3.00 - Photostat-$8.00
Production at the Wolfen plant was under way but only nitrocellulose was available for the photographic film base. Information was obtained on the antistatic treatment of acetate base. Information was obtained on a rapid drying ("straight-away") machine in which drying of the emulsion was said to be effected without prior setting. Complete manufacturing details for Agfacolor film are reproduced or fully documented herein. These include manufacturing data for color couplers and dyes made at I. G. factories at Höchst, Leverkusen and Krefeld-Uerdingen. As regards the research department, little useful information was obtained apart from (1) four reports on the specifications of film speed under a modified DIN system, (2) notes on manufacture of photographic photometric wedges, and (3) notes on the layout of the organic laboratories. Appendix A is a list of documents and drawings which were removed; Appendix B consists of reproductions (in German) or abstracts of selected documents; and Appendix C consists of supplementary notes on emulsion and processing formulas. Several drawings and graphs are included. This report supplements previously published BIOS and CIOS reports including the following: CIOS File XXVI-61, PB 339, v. 1, p. 23, this Bibliography; CIOS File XXX-15, PB 4263, v. 1, p. 377; and BIOS Final Report 397, PB 25659, v. 2, p. 143.

*PB L 85201. FEILDEN, G. B. R. High speed Schlieben camera for observation of flame travel. (BIOS Final Rept 14, Item 9). n. d. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
This high speed camera has operated at speeds up to 25,000 pictures per second. Intermittent spark illumination is used in conjunction with a simple rotating drum camera. This report discusses the scope of the apparatus and describes the optical arrangement, the electric circuits, and the construction of the discharge tube. Results and recommendations are given.

PB L 73114. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations and drawings for lenses for projectors, microscopes and allied instruments including resp. correspondence and descriptions. (FIAT Microfilm Reel H 31, Frames 8406-9266). 1904-1934. 861f. Price: Microfilm-$6.00 - Enlargement print-$86.50.
This FIAT microfilm reel consists of calculations, drawings and descriptions of lenses for projectors, microscopes and allied optical apparatus, including business correspondence and reprints of several articles. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. Some frames may not reproduce well.

Frames	Title	Price
8406-8459 PB L 73114	Three-lens projection objectives 1 : 3.6 f from 100 mm to 150 mm. Drawings and calculations. 1930. In German.	$5.50
8460-8479 PB L 73114	Ennor objective 1 : 4.3 f = 250 mm. Calculations and drawings. 1929. In German.	2.00
8480-8485 PB L 73114	Universal projection apparatus A. Tables of lenses, drawings, and calculations. 1924. In German.	1.50
8486-8498 PB L 73114	Projection objective f = 375 mm for small epidiascope. Calculations. 1924. In German.	1.50
8499-8502 PB L 73114	Projection objective 1 : 4.0 f = 400mm. Calculations. 1924. In German.	1.50
8503-8539 PB L 73114	Projection objective 1 : 4.3 f = 250 mm. Drawings and calculations. 1924. In German.	1.50
8540-8548 PB L 73114	Three-lens condenser f = 100 mm. Calculations. 1922. In German.	1.50
8549-8564 PB L 73114	Condenser for diaprojection 9 x 12 cm and for Bubi Leica projection apparatus. Calculations and drawings. 1926. In German.	2.00
8565-8574 PB L 73114	"Uleja" projection apparatus with Elmar objective f = 50 mm. Drawings. 1929. In German.	1.50
8575-8581 PB L 73114	Three-lens condenser f = 186 mm. Calculations. 1929. In German.	1.50
8582 PB L 73114	Condenser f = 67 mm. Drawing. n. d. In German.	1.50
8583-8586 PB L 73114	Three-lens condenser f = 210 mm. and f = 275 mm. Calculations. 1904. In German.	1.50
8587-8705 PB L 73114	Summar objective for projection 1 : 3. 1 f = 250 mm. Calculations and drawings. 1922-1923. In German.	12.00
8706-8712 PB L 73114	Recalculation of Dr. Bielecke's patent application B 150 030/42h for an "optical system". 1933. In German.	1.50
8713-8776 PB L 73114	Condenser 1 : 1. 2 f = 50 mm. and f = 75 mm for microprojector A 224. Drawings and calculations. 1933. In German.	6.50
8777 PB L 73114	Trichinoscope condenser model "Berlin". Drawing and data. 1934. In German.	1.50

8778-8787 PB L 73114 — Illumination optics for a dental lamp. Drawings and data. 1926. In German. 1.50

8788-8792 PB L 73114 — Condenser for a Leica projection apparatus f=168 mm. Drawings. n.d. In German. 1.50

8793-8808 PB L 73114 — Condenser for "Ukeja" projection apparatus. Calculations and drawings. n.d. In German. 2.00

8809-8816 PB L 73114 — Condenser for film projection apparatus 18 x 24 cm. Drawings and calculation. 1925. In German. 1.50

8817-8826 PB L 73114 — Condensers for microprojection f from 30 mm to 100 mm. Calculations and drawings. n.d. In German. 1.50

8827-8829 PB L 73114 — Condenser lens f=90.324 mm. Calculations. 1914. In German. 1.50

8830-8840 PB L 73114 — Meniscus condensers with supplementary lens and an article on correct illumination of specimens in microphotography. Calculations and drawings. 1920. In German. 1.50

8841-8843 PB L 73114 — Special arrangement for Leica projection. Data and drawings. 1928. In German. 1.50

8844-8849 PB L 73114 — Article on the application of incandescent lamps for trichinoscopes and lenses used for that purpose. Calculations and drawings. 1926. In German. 1.50

8850-8877 PB L 73114 — Small epidiascope for arc lamp illumination with various lenses. Calculation, data and drawings. 1920. In German. 3.00

8878-8894 PB L 73114 — Sets of projection lenses and objectives for various purposes. Lists, data, drawings and calculations. 1914. In German. 2.00

8895-9010 PB L 73114 — Optics for workshop microscopes. Drawings and description. 1932. In German. 3.00

9011-9097 PB L 73114 — Dr. K. B. Eisenberg's apparatus for photometric determination of dust density based on the principle of Tyndall meters. Description, articles, correspondence and drawings. 1930. In German. 9.00

9098-9225 PB L 73114 — Large comparison microscope for criminological purposes. Description, drawings, data, correspondence, lens tables, and calculations. 1932. In German. 13.00

9226-9266 PB L 73114 — Exposure tables for Leica enlargement apparatus, description and operation instructions. Drawings and calculations. 1931. In German. 4.50

PB L 73116. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations and drawings for microscope and telescope optics. (FIAT Microfilm Reel H 33, Frames 9786-9999, also frames 1-833). 1937-1945. 1047f. Price: Microfilm-$6.00 - Enlargement print-$105.00.

This FIAT microfilm reel consists of calculations and drawings for microscope and telescope optics. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. Some frames will not reproduce well.

Frames	Title	Price
9786-9791 PB L 73116	Semi-apochromatic objective 1 : 6.3 (cont. from Reel H 32 PB 73115) Calculations. n.d. In German.	$1.50
9793-9817 PB L 73116	Objective for metallographic microscope B 5. Calculations. n.d. In German.	3.00
9818-9839 PB L 73116	Objective L 100/48. Mecmilar 1 : 2 f= 20 mm. Calculations and drawings. n.d. In German.	2.50
9840-9843 PB L 73116	Objective L 100/50. Milar 1 : 4,5 f= 150 mm. Calculations and drawing. 1940. In German.	1.50
9844-9851 PB L 73116	Objective L 100/51 for stereoscopic loupe according to van Albada. Calculations. 1939. In German.	2.00
9852-9897 PB L 73116	Objective L 100/55, a triplet for trichinoscopes with incandescent lamp illumination 1 : 3 f= 37 mm. Calculations and drawings. 1939. In German.	4.00
9898-9999 1-53 PB L 73116	Lens L 100/54, ocular 1 x, f= 16, 57 mm. Calculations and drawings. n.d. In German.	15.50
54-57 PB L 73116	Objective L 80, Milar A=0.11, f= 40 mm. Calculations. 1937. In German.	1.50
58-76 PB L 73116	L 79, intermediate system for metallographic microscopes. Article, drawings and calculations. 1940. In German.	2.00
77-106 PB L 73116	Objective L 78, f= 3.6 A=0.90, 70 x. Calculations and drawings. 1936. In German.	3.00
107-168 PB L 73116	Objective L 76, Summar for trichinoscopes 1 : 2.8 f= 20.0 mm. Drawings and calculations. n. d. In German.	6.50
169-215 PB L 73116	Objective L 74, triplet for biological microscopes 1 : 5, f= 28 mm. Calculations and drawings. n. d. In German.	5.00
216-222 PB L 73116	Objective L 73, Milar f=100 mm. A=0.11. Calculations and drawings. 1940. In German	1.50
223-234 PB L 73116	Objective L 72 for glycerine immersion 1 : 3.0, 60 x. Calculations and drawings. 1937. In German.	1.50
235-304 PB L 73116	Objective L 71, achromat No. 6. Calculations and drawings. 1937. In German.	7.00
305-328 PB L 73116	Calculations for an objective. (Name and data illegible).	2.50
329-356 PB L 73116	Lists of lenses, instruments and research work produced by the department headed by Herr Metz. 1943. In German	3.00
357-370 PB L 73116	Objective L 203, achromat with long working distance and even focal plane, 1 : 0.65 f= 713 mm.	

Calculations and drawings. n. d. In German. 1.50

371-382 PB L 73116 — Objective L 30. Fl. I. B., f = 250 mm, A = 1.30. Calculations. n. d. In German. 1.50

383-389 PB L 73116 — L 204. optics for Makam camera attachment. Drawings. 1941-1942. In German. 1.50

390-403 PB L 73116 — Microscope optics for a hardness gage. 50 x. Drawings. 1942. In German. 1.50

404-503 PB L 73116 — Turret telescopic sight T.Z.F. with inserted Galilean system 2 x, objective f = 155.8 mm, ocular f = 78.00 mm. Calculations and drawings. 1942. In German. 10.00

504-506 PB L 73116 — Oculars L 100/72, L 100/73 and L 100/74 for microprojection. Drawings. 1940. In German. 1.50

507-556 PB L 73116 — Supplementary systems for microscope objectives f = 250 mm. Drawings and calculations. n.d. In German. 5.00

557-579 PB L 73116 — "Lihotsky" binocular tube for Ortholux microscope. Drawings and calculations. 1940. In German. 2.50

580-583 PB L 73116 — Milar objective for biological microscope, f = 32. mm, 3.5 x. Calculations. n. d. In German. 1.50

584-636 PB L 73116 — Objective L 100/66, f = 10.0 mm, A = 0.45. Calculations. n. d. In German. 5.50

637-681 PB L 73116 — Objective L 100/65, f = 8.00 mm, A = 0.60. Calculations. n. d. In German. 4.50

682-702 PB L 73116 — Milar objective f = 30.00 mm. Calculations. n. d. In German. 2.50

703-704 PB L 73116 — Objective L 11. Drawings. n.d. In German. 1.50

705-741 PB L 73116 — Objective for slit image apparatus L 9, f = 17.6 mm, 27 x. Drawings and calculations. n. d. In German. 4.00

742-833 PB L 73116 — Objectives L 2, L 3 and L 4 for metallographic microscopes, f = 15 mm, and f = 23.0 mm, A = 0.20. Calculations. 1945. In German. 9.50

PB L 73169. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations and drawings for objectives. (FIAT Microfilm Reel M 2, Frames 869-2008) 1937-1941. 1140 f. Price: Microfilm-$6.00 - Enlargement Print-$114.00

This FIAT microfilm reel consists of calculations and drawings for objectives as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
869-985 PB L 73169	Wide-angle objective f = 15 mm. Calculations. 1940. (Continuation of Reel M 1, PB 73168) In German.	12.00
986-1051 PB L 73169	Wide-angle objective f = 5 mm. Calculations and drawings. 1940. In German.	7.00
1052-1494 PB L 73169	Stereo-Elmar objective f = 3.5 cm. Calculations and diagrams. 1941. In German.	44.50
1495-2008 PB L 73169	Summar objective. Calculations. 1937. In German.	51.50

PB L 73170. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Calculations for objectives and manuscripts on optical matters. (FIAT Microfilm Reel M 3, Frames 2008-3197) 1932-1937. 1190 f. Price: Microfilm-$6.00 - Enlargement Print-$119.00

This FIAT microfilm reel consists of calculations for objectives and manuscripts of articles and lectures by Prof. Berek as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
2008-2057 PB L 73170	Summar objective 1 : 2.0, f = 50 mm. Calculations. 1937. In German. This is a continuation of Reel M 2, PB 73169.	$5.00
2058-2171 PB L 73170	Prof Berek's manuscript of a paper on the development of an optical image. Drawings, diagrams and photographs. 1934. In German.	11.50
2172-2282 PB L 73170	Prof. Berek's manuscript of a lecture on geometrical optics and the development of optical images. n.d. In German.	11.50
2283-2540 PB L 73170	Prof. Berek's manuscript of a lecture on the development of a physical image by the application of Bessel's functions. 1932. In German.	26.00
2541-2745 PB L 73170	Prof. Berek's manuscript on the development of objectives using characteristic objectives as examples: calculations, diagrams and drawings. n.d. In German.	20.50
2746-2752 PB L 73170	"Precision of an aircraft telescope". Including calculations. In German.	1.50
2753-2901 PB L 73170	Recalculation of two foreign patents for rapid objectives. Drawings and diagrams included. 1932-1937. In German.	15.00
2902-2977 PB L 73170	Recalculation of two foreign patents for the optics of polarization microscopes. 1937. In German.	8.00
2978-3017 PB L 73170	Copy of E Leitz's instruction for the use of and logarithmical tables for Berek's compensator. n.d. In German.	4.00
3018-3057 PB L 73170	Calculations for unidentified compensators. n.d. In German.	4.50
3058-3068 PB L 73170	Calibration tables for a mica compensator. n.d. In German.	1.50
3069-3078 PB L 73170	Recalculation of a 1929 U.S. patent of Arthur Warmisham (England) for photographic objectives. n.d. In German.	2.00
3079-3086 PB L 73170	Recalculation of Goerz Patent 355 636, 42h of Dec 12, 1922, for a photographic objective. n.d. In German.	1.50
3087-3110 PB L 73170	Rapid objectives of the Petzval type. Calculations and diagrams. n.d. In German.	2.50

3111-3138 PB L 73170 — Drawing and sketches for a two-diaphragm condenser and polarizer. n.d. In German. 3.00

3139-3197 PB L 73170 — Recalculations and notes on non-Leitz patents for rapid objectives. n.d. In German. 6.00

PB L 73115. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and calculations for microscope and projector optics, patent matter, etc. (FIAT Microfilm Reel H 32, Frames 9267-9786) 1928-1944. 520 f. Price: Microfilm $6.00 - Enlargement Print-$52.00
This FIAT microfilm reel consists of drawings and calculations for microscope and projector optics, patent matter pertaining to optical systems, sheets of German industrial standards (DIN), reprints from technical publications, etc. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. Some frames will not reproduce well.

Frames	Title	Price
9267-9294 PB L 73115	"Reinert" binocular microscope 8.5 x field 40.0 mm. Discussion of specifications for a new model. Drawings and calculations. 1944. In German.	$3.00
9295-9326 PB L 73115	Binocular microscope with a wide angle of view, 12.5 x and 14 x. Drawings and calculations. 1943. In German.	3.50
9327-9340 PB L 73115	Notes on C.P. Goerz patent application 461 063/42h of May 16, 1928, for an ocular with a wide angle of view for gun sight 5 x. Discussion of claims, calculation and drawings. In German.	1.50
9341-9342 PB L 73115	Ocular with a wide angle of view. Ger. patent 691 946, Jun 8, 1940. Application L 94057 VXa/42h, dated Jan 23, 1938. Inventor: Berek, M. and others. Drawing. In German.	1.50
9343-9351 PB L 73115	Optics for a binocular tube, including prism arrangement. Drawings. In German.	1.50
9352-9361 PB L 73115	Stereoptical attachment for Leica camera including a fluorite lens system. Drawings, calculation and diagrams. 1931. In German.	1.50
9362-9368 PB L 73115	Articles on the "Problem of illumination in the projection of miniature films from the American point of view" and "New American standards in motion-picture technique" from "Kinotechnische Umschau", Vol 10 and 15. 1935. In German.	1.50
9369-9401 PB L 73115	Sheets of German industrial standards (DIN) referring to the optical industry. 1923 to 1933. In German.	3.50
9402-9405 PB L 73115	Illegible.	
9406-9451 PB L 73115	Draft for a patent application, articles, calculations and drawings for a "supplementary system for compensation of the chromatic enlargement difference of microscope objectives. 1942. In German.	5.00
9452-9480 PB L 73115	Notes of Zeiss patent application Z 25612 for an "optical system for the elimination of chromatic aberration in microscope objectives". n.d. In German.	3.00
9481-9506 PB L 73115	Draft for Leitz patent application L 108 618 IXa/42h on "supplementary system for the elimination of magnification difference caused by chromatic aberration", notes and correspondence with the German Patent Office and other interested parties. Calculations. 1942-1943. In German.	2.00
9507-9568 9701-9716 PB L 73115	Draft for a patent application for "an interposed optical system of spherically limited glass bodies" (for the elimination of chromatic aberration). Discussion, memos, correspondence, calculations and drawings. 1942. In German.	7.50
9569-9573 PB L 73115	Parabolic reflector with a condenser. Drawings and calculation. n.d. In German.	1.50
9574-9577 PB L 73115	Reports of air raid damages on Jul 20, 1944. In German.	1.50
9578-9582 PB L 73115	Correspondence with the German Patent Office on matters pertaining to Leitz patent application L 105 493 IXa/42h, 1942. In German.	1.50
9583-9599 PB L 73115	Article on the correction needed in parabolic reflectors when the light source is displaced by 5% to 10% of focal distance. Drawings and calculation. 1941. In German.	2.00
9600-9603 PB L 73115	Biconvex lens with converging incident light. Drawings and calculations. 1941. In German.	1.50
9604-9653 PB L 73115	Collimator, polarization tube and illumination arrangement for Panphot equipment. Notes, drawings and calculations. 1941. In German.	5.00
9654-9660 PB L 73115	Data and drawings for a polarization microscope with a wide angle of view. 1943. In German.	1.50
9661-9678 PB L 73115	Path of light beams in the new Leitz metallographic microscope Model MM 1937/38. Drawings and calculations. 1938. In German.	2.00
9679-9700 PB L 73115	Auxiliary optical system for microscopes. Drawings and calculation. 1939. In German.	2.50
9717-9786 PB L 73115	Semi-apochromatic objective 1 : 6.3. Calculation and drawings. 1943. In German.	7.00

PB L 73168. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and calculations for objectives. (FIAT Microfilm Reel H 1, Frames 1-815) 1919-1928. 815 f. Price: Microfilm-$6.00 - Enlargement Print-$81.50
This microfilm reel consists of calculations and drawings for objectives and teleobjectives as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-85 PB L 73168	Mechau teleobjective f = 70.0 mm. Calculations and diagrams. 1928. Some frames may not reproduce well. In German.	$8.50

86-224 PB L 73168 — Mechau teleobjective f = 100.0 mm for motion-picture photography. Calculations and drawings. Drawings are illegible. 1920. In German. 14.00

225 PB L 73168 — Projection objective for diapositives, f = 100 mm. Drawing. 1924. In German. 1.50

226-230 PB L 73168 — Teleobjectives f from 125 mm to 160 mm. Drawings a few of which will not reproduce well. 1928. In German. 1.50

231-238 PB L 73168 — Teleobjective f = 160 mm. Drawing and calculations. 1928. In German. 1.50

239-254 PB L 73168 — Teleobjectives, f from 80 mm to 145 mm. Drawings few of which will reproduce well. 1926-1928. In German. 2.00

255-325 PB L 73168 — Teleobjective f = 150 mm. Drawings and calculation. Some frames may not reproduce well. No date. In German. 7.50

326-429 PB L 73168 — Simple telesystem consisting of two lens. Calculations. 1919. In German. 10.50

430-483 PB L 73168 — Original Petzval objective. Calculations and drawings. The drawings may not reproduce well. In German. 5.50

484-815 PB L 73168 — Objective for miniature film projectors 1:1.5. Calculation and drawing. n.d. Some frames may not reproduce well. In German. 33.50

PB L 73181. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and parts lists for colorimeters, spectroscopes etc. (FIAT Microfilm Reel M 14, Frames 6046-6903) 1930-1935. 858 f. Price: Microfilm-$6.00 - Enlargement Print-$86.00

This FIAT microfilm reel consists of parts lists and drawings for colorimeters, nephelometers, spectroscopes and allied equipment. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
6046-6087 PB L 73181	Combination colorimeter and nephelometer. Drawings and parts list. 1932. In German. This is a continuation of Reel M 13, PB 73180.	$4.50
6088-6125 PB L 73181	Hemometer. Parts list and drawings. 1932. In German.	4.00
6126-6250 PB L 73181	Colorimeter for hydrogen ions determination. Parts list and drawings. 1930. In German.	2.50
6251-6256 PB L 73181	Hand spectroscope with wave-length calibration. Parts list and drawings. 1935. Some frames may not reproduce well. In German.	1.50
6257-6267 PB L 73181	Colorimeter using a photocell. Drawings. 1932. In German.	1.50
6268-6805 PB L 73181	Leifo equipment. Drawings. 1934. In German.	54.00
6806-6837 PB L 73181	Small colorimeter, 5 cm. for absolute measurements. Parts list and drawings. 1932. In German.	3.50
6838-6843 PB L 73181	Large colorimeter, 10 cm. for absolute measurements. Parts list and drawings. 1932. In German.	1.50
6844-6852 PB L 73181	Universal colorimeter for absolute measurements. Parts list and drawings. 1932. In German.	1.50
6853-6903 PB L 73181	Leifo-K equipment. Drawings. 1934. In German.	5.00

PB L 73180. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and parts lists for drawing instruments, microscopes, etc. (FIAT Microfilm Reel M 13, Frames 5279-6045) 1922-1944. 767 f. Price: Microfilm-$6.00 - Enlargement Print-$77.00

This FIAT microfilm reel consists of parts lists and drawings for drawing apparatus, microscopes, with accessories, etc., itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
5279-5320 PB L 73180	Illumination equipment for large metallographic microscope M.M. 1938. Drawings. 1941. In German.	$4.50
5321-5348 PB L 73180	Stereoscopic tube for large metallographic microscope M.M. 1938. Drawings. 1940. In German.	3.00
5349-5391 PB L 73180	Accessories for large metallographic microscope M.M. 1939. Drawings. 1941. In German.	4.50
5392-5402 PB L 73180	Projektar objective IIa, f = 70.0 mm. Drawings. 1941. In German.	1.50
5403-5458 PB L 73180	Opak illuminator for incidence light. Drawings. 1940. In German.	6.00
5459-5493 PB L 73180	Small projection and drawing apparatus. Parts list and drawings. 1927. In German.	3.50
5494-5557 PB L 73180	Large macroscopic drawing apparatus. Part list and drawings. 1923. In German.	6.50
5558 PB L 73180	Drawing apparatus for Dürken. Photograph. In German.	1.50
5559-5568 PB L 73180	Drawing bench with double tilting arrangement. Parts list and drawings. 1922. In German.	1.50
5569-5586 PB L 73180	Drawing apparatus for vertical specimens. Parts list and drawings. 1925. In German.	2.00
5587-5612 PB L 73180	Large macroscopic drawing apparatus with a table clamp. Photographs, parts list and drawings. 1927. In German.	3.00
5613-5614 PB L 73180	Drawing apparatus for a binocular loupe. Drawings. 1928. In German.	1.50
5615-5679 PB L 73180	Large drawing apparatus. Parts list and drawings. 1931. In German.	6.50
5680-5700 PB L 73180	Drawing attachment for 24° and 45° work. Parts list and drawings. 1932. In German.	2.50
5701-5778 PB L 73180	Hemoglobinometer. Parts list, drawings and photographs. 1922. In German.	8.00
5779-5802 PB L 73180	Hand spectroscope with comparison prism. Parts list and drawings. 1934. In German.	2.50
5803-5828 PB L 73180	Large colorimeter, 10 cm. Parts list, drawings and photographs. 1925. In German.	3.00

5829-5939 PB L 73180 — Small colorimeter, 5 cm. Parts list and drawings. 1925. In German. 11.50

5940-5963 PB L 73180 — Small colorimeter, 2 cm. Parts list and drawings. 1926. In German. 2.50

5964-6045 PB L 73180 — Combination colorimeter and nephelometer. Parts list and drawings. 1930. In German. 9.50

PB L 73178. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and parts lists for microscopes, projectors and cameras. (FIAT Microfilm Reel M 11, Frames 3577-4364) 1929-1941. 788 f. Price: Microfilm-$6.00 - Enlargement Print-$79.00

This FIAT microfilm reel consists of parts lists and drawings for projection apparatus, microscopes with accessories and a motion-picture camera as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
3577-3590 PB L 73178	Projection apparatus Type XVIk for anatomical purposes. Drawings. 1935. In German. This is a continuation of Reel M 10, PB 73177.	$1.50
3591-3602 PB L 73178	Workshop microscope MS1. Parts list and drawings. 1922. In German.	1.50
3603-3623 PB L 73178	Jointed microscope. Parts list and drawings. 1922. In German.	2.50
3624-3629 PB L 73178	Small portable microscope. Drawings. 1922. In German.	1.50
3628-3666 3731-3803 PB L 73178	Microscope stand M.O. with exchangeable tubes and stages. Photographs, parts list and drawings. 1926-1929. In German.	11.50
3667-3729 PB L 73178	Microscope stand M.O.P. Drawings. 1934. In German.	6.50
3730 PB L 73178	Cooler and filter holder for metallographic microscope M.M. 3213. Parts list. 1928. In German.	1.50
3804-4055 PB L 73178	Central microscope stand model 1929. Parts lists and drawings. 1930. In German.	25.50
4056-4163 PB L 73178	Accessories for metallographic reflex microscope stand M.M 3223. Parts lists and drawings. 1932. A few frames will not reproduce well. In German.	11.00
4164-4176 PB L 73178	Askania motion-picture camera for metallographic microscope M.M. 3222. Parts list and drawings. 1941. In German.	1.50
4177-4243 PB L 73178	Opak illuminator with cuneal mirror. Parts list and drawings. 1921. In German.	7.00
4244-4267 PB L 73178	Mechanical stage for microscope stand M.O. Parts list and drawings. 1923. In German.	2.50
4268-4286 PB L 73178	Accessories for microscope stand M.O. Parts lists and drawings. 1935-1931. In German.	2.00
4287-4296 4365-4435 PB L 73178	Small metallographic microscope M.M. Drawings and parts list. 1938. In German.	8.50
4297-4317 PB L 73178	"Opaly" lamp. Parts list and drawings. 1925. In German.	1.50
4318-4364 PB L 73178	Central microscope stand with polarization equipment. Parts list and drawings. 1932. A few frames may not reproduce well. In German.	5.00

PB L 73177. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Drawings and parts lists for projection apparatus. (FIAT Microfilm Reel M 10, Frames 2701-3576) 1930-1937. 876 f. Price: Microfilm-$6.00 - Enlargement Print-$88.00

This FIAT microfilm reel consists of parts lists and drawings for projection apparatus for various purposes itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German. A large part of this reel is either illegible or very indistinct.

Frames	Title	Price
2701-2712 PB L 73177	Projection apparatus Type XIV. (Drawings which may not reproduce well.) 1930. In German. This is a continuation of Reel M 9, PB 73176.	$1.50
2713-2736 PB L 73177	Finger-print projection apparatus. Drawings. n.d. Most frames indistinct. In German.	2.50
2737-2787 PB L 73177	Workshop control projection apparatus Type XIVd. Parts list and drawings. 1935. Will not reproduce well. In German.	5.50
2788-3003 PB L 73177	Projection apparatus for testing type levers. Drawings. n.d. visible. May not reproduce well. In German.	3.00
3004-3042 PB L 73177	Episcope Type XIVx. Parts list and drawings. 1933. In German.	4.00
3043-3136 PB L 73177	Episcope Type XIVf. Parts lists and drawings. 1934. In German.	9.50
3137-3220 PB L 73177	Microepiscope Type XIVi. Parts list and drawings. 1937. Some frames may not reproduce well. In German.	8.50
3221-3239 PB L 73177	X-ray projection apparatus Type XIV. Parts list and drawings. n.d. May not reproduce well. In German.	2.00
3240-3260 PB L 73177	X-ray epidiascope Type XIVa. (Drawings which will not reproduce well.) n.d. In German.	2.50
3261-3274 PB L 73177	X-ray projector Type XIVb. Drawings. n.d. Will not reproduce well. In German.	1.50
3275-3321 PB L 73177	X-ray epidiascope Type XIVc. Parts list and drawings. n.d. Very indistinct. In German.	5.00
3322-3366 PB L 73177	X-ray epidiascope Type XIVf. Drawings. 1933. Indistinct. In German.	4.50
3367-3431 PB L 73177	X-ray episcope Type XIVg. Parts list and drawings. 1934. In German.	6.50
3432-3473 PB L 73177	Episcope Type XVIh with six 500 watt lamps. Parts list and drawings. 1934. In German.	4.50
3474-3569 PB L 73177	Episcope Type XVIf. Parts list and drawings. 1934. Most frames will not reproduce well. In German.	10.00
3570-3576 PB L 73177	Projection apparatus Type XVIk for anatomical purposes. Drawings. 1935. In German.	2.00

PB L 73176. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Parts lists and drawings for projection and X-ray apparatus.

Photographic and Optical Goods (contd)

(FIAT Microfilm Reel M 9, Frames 1747-2700) 1931-1941. 954 f. Price: Microfilm-$6.00 - Enlargement Print-$95.50

This FIAT microfilm reel consists of drawings and parts lists for projection apparatus with accessories and for X-ray diagnosis equipment. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1747-1773 PB L 73176	Projection microscope Type Xbs. Parts list and drawings. 1931. In German.	$3.00
1774-1794 PB L 73176	Microepiscope Type Xe. Parts list and drawings. 1935. In German.	2.50
1795-1806 PB L 73176	Projection microscope with Leica attachment. Parts list and drawings. 1936. In German.	1.50
1807-1812 PB L 73176	Projection microscope Type Xc. Drawings. 1936. In German.	1.50
1813-1822 PB L 73176	Projection microscope Type Xf. Parts list. In German.	1.50
1823-1965 PB L 73176	Rapid changing equipment (for diapositives) Type XIc. Parts list and drawings. 1933. In German.	14.50
1966-2013 PB L 73176	Projection apparatus Type XIe. Parts list and drawings. 1936. In German.	2.00
2014-2142 PB L 73176	Projection apparatus Type XIe. Parts list and drawings. 1936. In German.	3.00
2143-2312 2445-2452 2458-2496 PB L 73176	Projection apparatus Type VIIIS' with accessories. Parts list and drawing. 1937. In German.	22.00
2313-2444 PB L 73176	Projection apparatus Type XIb. Parts list and drawings. 1931. In German.	13.50
2453-2457 PB L 73176	Camera attachment for dimax objectives f = 150 mm, 200 mm and 250 mm. Drawings. 1936. In German.	1.50
2497-2500 PB L 73176	Frame for rapid change of diapositives. Drawings. 1938. In German.	1.50
2501-2516 PB L 73176	Image viewer for projection apparatus Type VIIIS. Drawings. 1938. In German.	2.00
2517-2582 PB L 73176	Apparatus for X-ray diagnosis "Roentgendiagnostor". Drawings. 1939. In German.	7.00
2583-2632 PB L 73176	Stereoscopic attachment for projection apparatus. Drawings. 1941. In German.	5.00
2633-2700 PB L 73176	Projection apparatus Type XIVZ. Parts list and drawings. 1932. In German.	7.00

PB L 73173. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Parts lists and drawings for projection apparatus and accessories. (FIAT Microfilm Reel M 6, Frames 4-743) 1929-1943. 740 f. Price: Microfilm-$6.00 - Enlargement Print-$74.00

This FIAT microfila reel consists of parts lists and drawings for projection apparatus and accessories as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
4-18 PB L 73173	Projection apparatus Vi with a three-lens diacondenser. Drawings. 1929. In German.	$1.50
19-32 PB L 73173	Projection apparatus Vh. Drawings and photographs. 1930. In German.	1.50
33-39 PB L 73173	Mirror 190x 120x 10 mm for projectors. Drawings. 1937. In German.	1.50
40-44 PB L 73173	Silverplated mirror 3x 319x 239 mm. Drawings. 1940. In German.	1.50
45-56 PB L 73173	Mirror 15 x 215x 300 mm. Drawings. 1939. In German.	1.50
57-71 PB L 73173	Projector lenses f = 205 mm to 1500 mm. Drawings. 1940. In German.	1.50
72-104 109-112 118-139 PB L 73173	Plano-convex projector lens f = 30 mm to 1500 mm. Drawings. 1940. In German.	6.00
105-108 PB L 73173	Condenser lens. Drawings. 1941. In German.	1.50
113-117 PB L 73173	Meniscuses, f = 214 mm - 315 mm. Drawings. 1943. In German.	1.50
140-150 PB L 73173	Filters and glass plates. Drawings. 1941. In German.	1.50
151-323 PB L 73173	Projection apparatus Type IIIg. Drawings. 1933. In German.	17.50
324-437 PB L 73173	Projection apparatus Type IIIL with Epis objective f = 600 mm. Parts lists and drawings. 1939. In German.	11.50
438-518 PB L 73173	Projection apparatus Type IIIa, 100/60 cm. Drawings. 1938. In German.	8.50
519-544 PB L 73173	Projection apparatus Type III o. Drawings. 1934. In German.	3.00
545-567 PB L 73173	Projection apparatus Type IIIg 2. Parts lists. 1937. In German.	2.50
568-743 PB L 73173	Projection apparatus Type IIIg 2. Drawings. 1937-1938. In German.	18.00

PB L 73174. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Parts lists and drawings for projection apparatus and accessories. (FIAT Microfilm Reel M 7, Frames 4-922) 1930-1939. 919 f. Price: Microfilm-$6.00 - Enlargement Print-$92.00

This FIAT microfilm reel consists of drawings and parts lists for various types of projection apparatus and accessories. Individual items are listed below and will be available as enlargement prints only; the entire reel may be purchased in microfila form for $6.00. Please include PB and frame numbers when ordering individual items from this microfila reel. In German.

Frames	Title	Price
4-8 PB L 73174	Accessories for projection apparatus Type IIIg 2. Drawings and parts list. 1937. (Continued from reel M 6, PB 73173). In German.	$1.50
9-101 PB L 73174	Projection apparatus Type IIIg 1600/800/300. Parts lists and drawings. 1930. In German.	9.50
102-175 PB L 73174	Projection apparatus Type IIIa 2. Drawings. 1939. In German.	7.50
176-289 PB L 73174	Projection apparatus Type IVB. Parts lists and drawings. 1939. In German.	11.50

290-318 PB L 73174 — Portable diascope Type IVS 8½x10. Parts lists and drawings. 1934. Some frames may not reproduce well. In German. 3.00

319-346 PB L 73174 — Projection apparatus Type IVT. Parts lists and drawings. 1934. In German. 3.00

347-370 PB L 73174 — Pocket diascope Type IVU. Parts lists and drawings. 1934. In German. 2.50

371-445 PB L 73174 — Diaprojector Type IVi. Drawings. 1939. In German. 7.50

446-485 PB L 73174 — Projection apparatus Type VS, objective 400/250 mm. Parts lists and drawings. 1934. In German. 4.00

486-510 PB L 73174 — Projection apparatus Type V for a 500 mm objective. Drawings. 1930. In German. 2.50

511-641 PB L 73174 — Projection apparatus Type Vp. Drawings. 1935-1939. In German. 13.50

642-672 PB L 73174 — Small episcope Type Vu. Drawings. 1935. In German. 3.50

673-750 PB L 73174 — Projection apparatus Type Vp 2. Parts lists and drawings. 1935. In German. 8.00

751-856 PB L 73174 — Projection apparatus Type VhII. Parts lists and drawings. 1937-1939. In German. 11.00

857-922 PB L 73174 — Projection apparatus Type Vx. Drawings. 1935-1937. In German. 7.00

PB L 73175. LEITZ, ERNST, G.m.B.H., WETZLAR, GERMANY. Parts lists and drawings for projection apparatus. (FIAT Microfilm Reel M 8, Frames 926-1746) 1930-1941. 821 f. Price: Microfilm-$6.00 - Enlargement Print-$82.50

This FIAT microfilm reel consists of parts lists and drawings for various types of projection apparatus as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
926-1101 PB L 73175	Projection apparatus Type VhI, 400/250 mm. Parts lists and drawings. 1937. In German.	$8.00
1102-1175 1191-1266 PB L 73175	Diapositive attachments for projection apparatus Types IIIL, Vs and Ve. Parts lists and drawings. 1937. In German.	15.00
1176-1190 PB L 73175	Projection apparatus Type Vp. Drawings. 1934. In German.	1.50
1267-1281 PB L 73175	Diapositive attachment for projection apparatus IIIg 2. Parts list and drawings. 1936. In German.	1.50
1282-1318 PB L 73175	Universal diapositive attachment for projection apparatus. Drawings. 1941. In German.	3.00
1319-1430 PB L 73175	"Berlin" projection apparatus Type IXp. Drawings. 1938. In German.	12.50
1431-1434 1485-1565 PB L 73175	Trichinoscope Type IXg. Parts lists and drawings. 1935. In German.	8.50
1435-1484 PB L 73175	Small trichinoscope Type IXg 2. Parts lists and drawings. 1935. In German.	5.00
1566-1592 PB L 73175	Projection microscope Type XL, objective: Summar 42 mm. Parts list and drawings. 1930. In German.	1.50
1593-1649 PB L 73175	Projection microscope Type X m, with Summar objective 42 mm. Parts list, drawings and photographs. 1933. In German.	6.00
1650-1719 PB L 73175	Projection microscope Type Xb. Parts list and drawings. 1931. In German.	7.00
1720-1746 PB L 73175	Projection microscope Type Xp. Parts list and drawings. 1931. In German.	3.00

PB L 73172. LEITZ, ERNST, G.m.B.H., WETZLAR, GERMANY. Parts lists and drawings for projectors. (FIAT Microfilm Reel M 5, Frames 4132-4969) 1921-1935. 838 f. Price: Microfilm-$6.00 - Enlargement Print-$84.00

This FIAT microfilm reel consists of parts lists and drawings for projectors, microprojectors and motion-picture projectors as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frames numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
4132-4191 PB L 73172	Small epidiascope with a Liliput lamp. Drawings and parts lists. 1921. In German.	$6.00
4192-4203 PB L 73172	Microprojector with a special collimator. Parts lists and drawings. 1923. In German.	1.50
4204-4290 PB L 73172	Projectors Gnom I, Gnom II and Gnom III. Parts lists and drawings. 1926. In German.	9.00
4291-4296 PB L 73172	"Rubi" projector. Parts lists and drawings. 1926. In German.	1.50
4297-4350 PB L 73172	Microlar M.P. microprojector. Parts lists and drawings. 1934. In German.	5.50
4351-4397 PB L 73172	Microprojector "A". Parts lists and drawings. 1927. In German.	5.00
4398-4481 PB L 73172	Polarization microprojector "A-Pol". Parts lists and drawings. 1931. In German.	6.50
4482-4496 PB L 73172	Polarization microprojector "A-Pol". Parts lists and drawings. 1927. In German.	1.50
4497-4654 PB L 73172	Tensiometer. Drawings. Parts lists. 1937. A few frames may not reproduce well. In German.	16.00
4655-4739 PB L 73172	"Udifa" motion-picture projector. Parts lists and drawings. 1928-1930. In German.	8.50
4740-4840 PB L 73172	"Udigo" motion-picture projector. Parts lists and drawings. 1932. In German.	10.50
4841-4848 PB L 73172	Diascopic attachment for "Udifa". Parts lists and drawings. 1931. In German.	1.50
4849-4883 PB L 73172	Table with a spindle for microprojection. Parts lists and drawings. 1930. In German.	3.50
4884-4902 PB L 73172	Small trichinoscope Type IXg. Parts lists and drawings. 1935. In German.	2.00
4903-4916 PB L 73172	Rider with a cooler and condenser for microprojectors with two-diaphrags	

	condensers. Parts lists and drawings. 1930. In German.	2.00
4917-4919 PB L 73172	These frame numbers were skipped by numbering machine.	
4920-4969 PB L 73172	X-ray apparatus projection "MUNSTER". Drawings. 1932. Some frames may not reproduce well. In German.	5.00

PB L 73171. LEITZ, ERNST, G.M.B.H., WETZLAR, GERMANY. Parts lists, drawings and calculations for objectives, projection apparatus and accessories. (FIAT Microfilm Reel M 4, Frames 3198-4022) 1920-1935. 825 f. Price: Microfilm-$6.00 - Enlargement Print-$82.50
This FIAT microfilm reel consists of calculations, parts lists and drawings as itemized below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
3198-3268 PB L 73171	Notes on and recalculations of British Patent No. 1991 granted Jun 30, 1893 to H. Dennis Taylor for a photographic system consisting of three free lens and an undated draft of a patent application for a related system. In German. This is a continuation of Reel M 3, PB 73170.	$7.50
3269-3367 PB L 73171	Projection system f = 600 mm and f = 800 mm. Calculation and diagrams. 1927. Some frames will not reproduce well. In German.	10.00
3368-3376 PB L 73171	Recalculation of a British patent granted to H. L. Granatzki of Berlin for a variable-magnification attachment for photographic objectives consisting of three lens. 1935. In German.	1.50
3377-3380 PB L 73171	ZEISS, CARL, JENA. Anastigmatic objective. Ger. patent 636 167, Oct 7, 1936. Application Z 21153 IX/42h, dated Jun 27, 1933. In German. Drawings.	1.50
3381-3384 PB L 73171	Copies of non-Leitz patents claims for objectives. 1930. In German.	1.50
3385-3408 PB L 73171	Monochromatic objective 1 : 5, f = 200 mm. Calculations and diagrams. n. d. In German.	2.50
3409-3447 PB L 73171	Objectives with great light-transmitting power. Calculations and copy of British Patent 373 950 of Kapella, Ltd. Leicester for improvements in phot graphic and projection lens. Jun 2, 1932. In German.	4.00
3448-3475 PB L 73171	Recalculation of and notes on Zeiss Icon supplement to German patent 530 843 of 1932 for objective Sonnar. Drawing. n.d. In German.	3.00
3476-3481 PB L 73171	Recalculation of and notes on Voigtländer A.G., German patent 44415 of Feb 18, 1925 for teleobjective 1 : 4.5, f = 100 mm. n.d. In German.	1.50
3482-3672 PB L 73171	Four-lens objective. Theoretical calculation of its elements. Diagrams. n.d. In German.	19.50
3673-3730 PB L 73171	Mechau motion-picture projector. Calculation of its optics. Drawings and a copy of Leitz prospectus for the Mechau projector. 1927. In German.	6.00
3731-3831 PB L 73171	Microprojection apparatus. Parts lists and drawings. 1922. In German.	10.50
3832-3899 PB L 73171	Case for the "Liliput" lamp. Parts lists and drawings. 1920.	7.00
3900-3908 PB L 73171	Cooler for a projection apparatus. Parts lists and drawings. 1920. In German.	1.50
3909-4022 PB L 73171	Trichinoscope Model 1913. Parts lists and drawings. 1920. In German.	11.50

PB L 73416. SIEMENS-SCHUCKERTWERKE A. G., BERLIN. Method of producing aluminum-surfaced mirrors. (FIAT Microfilm Reel J 236, Frames 7044-7058) 1940-1941. 15 f. Price: Microfilm-$1.00 - Enlargement print-$1.50
This document consists of three reports on the production of aluminum-surfaced mirrors having good adhesive properties, resistance to wiping, high coefficient of reflection and any desired degree of transmittance. Photographs included. In German.

*PB L 77685. U. S. FIELD INFORMATION AGENCY TECHNICAL. Survey of the German camera industry. (Tech Bulletin T-11). 7 p. Price: Mimeo-$0.25
This report covers a survey of 15 German camera manufacturers. An individual report is presented for each factory covering: conditions found; a description of models produced; facilities; staff employed; and production.

PB L 22083. U. S. WAR DEPARTMENT. Printer PH-191. (TM 11-2372) Apr 1945. 26 p. Price: Microfilm-50¢ - Photostat-$2.00

TEXTILES AND TEXTILE PRODUCTS

*PB L 78220. COTTENILL, E. and ROBINSON, E. Visit to rayon throwing and doubling factory at Kunstseiden, A. G. (BIOS Final Rept 1138, Item 22, 31). Feb 1947. 11 p. Price: Microfilm-$1.00 - Photostat-$1.00
This unit of the Vereinigte Glenstoff-Fabriken Combine is primarily a development unit to further the utilization of rayon and secondarily, a commercial unit. The whole range of effect threads, novelty folded yarns, and twisted yarns made from rayon, can be covered by the plant. A brief description is given of the factory which is well planned and well equipped. Several drawings illustrate winding equipment and spindles.

PB L 80746. DANIELS, C. H. and others. Sericulture in Japan. (SCAP Natural Resources Sect. Rept 76). Apr 1947. 37 p. Price: Microfilm-$1.00 - Photostat-$3.00
Silk production in Japan is a highly technical and specialized industry. Specialists are employed in all phases of the industry, including mulberry culture, silk-worm breeding, egg production, disease control, cocoon production, reeling, and by-product utilization. This report discusses the various phases of the industry under the following headings: mulberry production; silkworms; commercial production of cocoons; organization of the sericulture industry in Japan; and position of sericulture in the general economy. Illustrations and tables are included.

*PB L 79225. DAVY, WALTER. Textile waste reclamation (wool, rayon and real silk). Part II. (BIOS Final Rept 1294, Item 22). Jan 1947. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

The report contains some notes on the products of the following plants: (1) Mitteldeutsche Spinnhutte at Celle, Peine, and Osterode (silk spinners); (2) Erste Deutsche Ramiegesellschaft, Emmendingen (vegetable fiber, rayon fiber, and silk spinners); (3) Karlin & Co., Schiltach (woolen manufacturers); (4) Kautzmann & Jahn, Schenkenzel (shoddy manufacturers); (5) Schwarzwalder Textile Werke, Haslach (shoddy manufacturers); and (6) Balder and Wurth, Eitra, Nr. Hersfeld (woolen yarn spinners). No important discovery was made. The wool waste and rayon waste opening machinery was no better than British made. The silk waste processes and machinery however, were excellent. This report completes the investigation of BIOS trip 2534. For part 1 of the report see BIOS Final Report 828, PB 63624, v. 5, p. 132, this Bibliography.

*PB L 78727. DIAMOND, C. Information on the projected plant at Landsberg for the manufacture of cellulose acetate by the methylene chloride process. Interrogation of Drs. Hohn, Schnegg, and Ziegler. (BIOS Final Rept 1075, Item 22; Interrogation Rept 339). n. d. 17 p. Price: Microfilm-$1.00 - Photostat-$2.00

At the end of the war, all plans for this factory had been completed, and construction work had proceeded as far as the installation of two acetylating units. There were plans for an experimental as well as a commercial plant, the experimental plant including units of 100 liters, 200 liters, and 1000 liters, and the commercial plant being based upon an acetylated unit of 25 m^3. The production of the large-scale plant was to be of the order of 200 metric tons per month, using two acetylators, and eventually of the order of 600 metric tons per month, using six acetylators. The general arrangement of the plant is described and a list of the main plant items for an output of 600 tons per month is given. Diagrams show the schematic layout and the pneumatic handling of cellulose. Flowsheets of the 200 ton and 600 ton plants are also given.

*PB L 77711. EVANS, J. G. Wool - Its chemistry and modification by chemical treatment in Germany. (BIOS Final Rept 1229, Item 22). Mar 1947. 19 p. Price: Microfilm-$1.00 - Photostat-$2.00

There were three main centers of research on wool in Germany. These were Karlsruhe Technische Hochschule where Professor Eled had founded a school of protein research, Wurzberg University where Schöberl studied the chemistry of wool and lastly the laboratories of the I. G. at Höchst. The report discusses the war-time work of Schöberl and sources of his published information. The work of the I. G. is also discussed. This work had been largely inspired by the work of Harris in the U. S. and Speakman in Britain on cross linkages in wool and was directed towards improvements in alkali resistance. A list of Eled's published work on wool performed during the war period is included. There is no other information on Eled's work in this report as he was not available for questioning. The report includes a list of acid and chrome developed dyestuffs suitable for woolen goods containing resisted dyestuffs.

PB L 70415. I. G. FARBENINDUSTRIE A. G., BOBINGEN/BAYERN, GERMANY. Reports on finishing of textiles and the manufacture of synthetic fibers. (FIAT Microfilm Reel E 12, Frames 1-932) 1936-1943. 932 f. Price: Microfilm-$6.00 - Enlargement print-$93.80

This reel was prepared by FIAT investigators in Germany. 96 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-4 PB L 70415	HAEEL, CARL, A. G., SIEGMAR, SCHONAU. Method and installation for the manufacture of threads, strands, bands, etc., made of meltable material. German Patent Application H 171 744 VII/29a, May 31, 1943. In German. 2 drawings.	$1.50
5-7 PB L 70415	Tanigan DLN for stiffening of fibers. By Dr. Muller and Dr. Spencker, Jul 30, 1943. In German.	1.50
8-11 PB L 70415	Steam polymerization of caprolactam. By Dr. Krumbin, Jul 5, 1943. In German.	1.50
12-13 PB L 70415	Behavior of Perlon fiber in a formaldehyde bath. By Dr. Krumbin, n. d. In German.	1.50
14-17 PB L 70415	Test on the treatment of Perlon fiber with urea resins. By Dr. Muller, Jun 21, 1943. In German.	1.50
18-26 PB L 70415	Fabric for pneumatic boats made of Perlon. By Dr. Schwan, May 19, 1943. In German.	1.50
27-28 PB L 70415	Tests of curling by pressure. By Dr. Spencker, May 20, 1943. In German.	1.50
29-39 PB L 70415	Viscosity variations due to drying. By Dr. Mueller, Apr 28, 1943. In German.	1.50
40-41 PB L 70415	Storing of "Laktam." By Dr. Sprencker, Apr 13, 1943. In German.	1.50
42-45 PB L 70415	Experience report on AS material. By Dr. Sprencker, Apr 8, 1943. In German.	1.50
46-53 PB L 70415	Treatment of perlon-fiber with tanning agents containing sulfone. By Dr. Mueller, Mar 26, 1943. In German.	1.50
54-59 PB L 70415	Polyurethane polymerization. By Dr. Spencker, Feb 8, 1943. In German.	1.50
60-66 PB L 70415	Preparation tests for the purpose of manufacturing the purest perlon fiber. By Dr. Spencker, Feb 2, 1943. In German.	1.50
67-72 PB L 70415	Treatment of Perlon fiber with synthetic tanning agents. By Dr. Mueller, Jan 25, 1943. In German.	1.50
73-77 PB L 70415	Treatment of Perlon fiber with tannin and synthetic tanning agents. By Dr. Mueller, Sep 29, 1942. In German.	1.50
78-82 PB L 70415	Preparation problems with regard to the effect of tannin. By Dr. Spencker, Jul 3, 1942. In German.	1.50
83-87 PB L 70415	Treatment of the Perlon fiber in aqueous tannin baths. By Dr. Mueller, Jun 17, 1942. In German.	1.50
88-112 PB L 70415	Manufacture of Suprema-rayon. Jan 10, 1938. In German.	2.50
113-119 PB L 70415	Experiences with Leuna products as matting agent. By Dr. Waldingen, Jan 4, 1936. In German.	1.50
120-157 PB L 70415	Spinnerets. Dec 1941-Sep 1942. In German.	4.00
158-161 PB L 70415	Production of permanently curled threads of fibers from molten masses. Jan 27, 1942. In German.	1.50
162-168 PB L 70415	ZELLWOLLE-U. KUNSTSEIDE-RING, BERLIN. Method for increasing the qualities of textiles. German Patent Application Z 27172, Jul 6, 1942. In German.	1.50

169-173 PB L 70415 ZELLWOLLE-U. KUNSTSEIDE-RING, BERLIN. Production of highly molecular condensation products. German Patent Application Z 27426, Oct 29, 1942. In German. 1.50

174-176 PB L 70415 ZELLWOLLE-U. KUNSTSEIDE-RING, BERLIN. Method for the manufacture of films, foils, threads, bands, etc., made from polyamides and proteins. German Patent Application Z 27480. Addition to Patent Application Z 26280 IVc/29b, Nov 20, 1942. In German. 1.50

177-184 PB L 70415 THÜRINGISCHE ZELLWOLLE A. G. and ZELLWOLLE U. KUNSTSEIDE-RING, G.m. b. H., BERLIN. Process for producing artificial filaments, fibers or bands with improved properties. German Patent Application Z 57754 IVc/29b, Jul 25, 1942. In German. 1.50

185-187 PB L 70415 THÜRINGISCHE ZELLWOLLE A. G., and ZELLWOLLE UND KUNSTSEIDE RING G. m. b. H., BERLIN. Process for producing curling of artificial filaments etc., of polyamides or polyurethanes. German Patent Application T 58676, Oct 7, 1942. In German. 1.50

188-191 PB L 70415 THÜRINGISCHE ZELLWOLLE A. G., and ZELLWOLLE UND KUNSTSEIDE-RING, G. m.b.H., BERLIN. Process for producing curling of artificial fibers particularly of polyamides and polyurethanes. German Patent Application T58194 IVc/29b, Oct 29, 1942. In German. 1.50

192-194 PB L 70415 THUERINGISCHE ZELLWOLLE A. G., and ZELLWOLLE UND KUNSTSEIDE-RING, G. m.b.H., BERLIN. Process for dyeing textiles made of superpolyamides. German Patent Application T 58358 IVd/8m, Dec 1, 1942. In German. 1.50

195-198 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE- UND KUNSTSEIDE-RING, BERLIN. Process for treating filamentary structures made of super polyamides and polyurethanes. German Patent Application T 58569 IVc/29b, Jan 14, 1943. In German. 1.50

199-201 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE- UND KUNSTSEIDE-RING, BERLIN. Process for the production of linear condensation products. German Patent Application T 58712, n. d. In German. 1.50

202-205 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE-UND KUNSTSEIDE-RING, BERLIN. Method of improving synthetic threads, fibers, etc., made of polyamides or their mixed products with proteins. German Patent Application T 58774, n. d., In German. 1.50

206-208 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE-UND KUNSTSEIDE-RING, BERLIN. Process for producing mixed linear polyamides of mixed condensates. German Patent Application T 58852, n. d. In German. 1.50

209-213 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE-UND KUNSTSEIDE-RING, BERLIN. Process for improving the strength of endless filaments of super-polyamides and super-urethanes. German Patent Application T 59372 IV c/29b, n. d. In German. 1.50

214-221 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE-UND KUNSTSEIDE-RING, BERLIN. Method for curling synthetic filaments. German Patent Application T 59 736 IVc/29b, n. d. In German. 1.50

222-229 PB L 70415 THÜR. ZELLWOLLE A. G., and ZELLWOLLE-UND KUNSTSEIDE-RING, BERLIN. Method for improving synthetic filaments. German Patent Application S 150643, May 23, 1942. In German. 1.50

230-240 PB L 70415 THUER. BONTE, BERLIN-ZEHLENDORF. Production of artificial fibers from spinned masses or solutions. German Patent Application B 197350 VII/29a, Mar 4, 1942. In German. 1.50

241-247 PB L 70415 Investigation of Perlon yarn fabrics for life belts. By Dr. Schiele, Jul 28, 1943. In German. 1.50

248-259 PB L 70415 Physiological testing of "Luran N." Feb 26, 1940. In German. 1.50

260-261 PB L 70415 Resistance of "polyamide silks" (nylon) to chloride of lime. By Dr. Hubert, Oct 5, 1939. In German. 1.50

262-265 PB L 70415 Polyamide fiber tests. By Dr. Weisbrod. n. d. In German. 1.50

266-267 PB L 70415 Hydrophobing of polyamide fibers. By Dr. Heisenberg, Jun 12, 1940. In German. 1.50

268-274 PB L 70415 Synthetic bristles. By Dr. Hubert, Oct 31, 1940. In German. 1.50

275-284 PB L 70415 Synthetic bristles of "Perlon" and "PCU." By Professor Ell, Feb 19, 1941. In German. 1.50

285-287 PB L 70415 Hygroscopic property of Perlon silk. Mar 25, 1941. In German. 1.50

288-295 PB L 70415 Perlon rayon processing and production of "Perlon." By Dr. Leo, Apr 4, 1941. In German. 1.50

296-297 PB L 70415 Determination of the absorbed oxygen in nitrogen. By Dr. Wagner, Nov 2, 1940. In German. 1.50

298-303 PB L 70415 Influence of temperature in the equilibrium Luran-Perluran. By Dr. Leo, Nov 5, 1940. In German. 1.50

304-307 PB L 70415 Differentiation between "Ludwigshafen Caprolactam" and "Leuna Caprolaktam," by means of permanganate. By Dr. Leo, Jan 30, 1941. In German. 1.50

308 PB L 70415 Investigation of Perlon silk extract. By Dr. Leo, Jan 10, 1941. In German. 1.50

309-340 PB L 70415 Research dealing with the processing of long staple spun rayon. By Engineer Helmut Koeb, Feb 1938. In German. 3.50

341-355 PB L 70415 Adhesion and friction conditions of fibrous materials. By Dr. Ing. Schmidhäuser and Dipl. Ing. R. Stöll, Feb 1938. In German. 1.50

356-386 PB L 70415 Heterogensity of cellulose. By Prof. Dr. H. Rath and Engineer H. Dolmetsch, Jul 1938. In German. 3.50

387-389 PB L 70415 Textile chemistry in universities. By Prof. Dr. H. Rath, n. d. In German. 1.50

390-393 PB L 70415 — The function of formaldehyde in the lanital fiber. By Prof. Dr. H. Rath and Dipl. Ing. A. Essig., Oct 1938. In German. 1.50

394-406 PB L 70415 — Bending strength as valuation scale particularly with regard to the influence of textile chemical treatments. By Dr. Fr. Kurtz, Oct 1938. In German. 1.50

406-413 PB L 70415 — Band and roving testing device with feeling nozzle. By Prof. Johannsen, Dipl. Ing. Kib, Oct 1938. In German. 1.50

414-503 PB L 70415 — Relations and causes of physical properties of rayon staple-and mixed yarns. By Dr. Schoemacker, Jan 1939. In German. 9.00

504-540 PB L 70415 — The economy of automatic weaving with the influence of various factors on special consideration of time requirements. By Dr. K. Schell, Jan 1939. In German. 4.00

541-551 PB L 70415 — Reports on rayon staple. By Prof. Johannsen, Dipl. Ing. Kölb. Apr 1939. In German. 1.50

552-560 PB L 70415 — Staple graphs and average length of the fiber. By Dr. Kölb, Apr 1939. In German. 1.50

560-561 PB L 70415 — New means for determining the twist of yarns and double yarns. By Dr. Krauter, Apr 1939. In German. 1.50

562-596 PB L 70415 — Processing of hemp wool. By Dr. Johannsen, Jun 1940. In German. 3.50

597-620 PB L 70415 — Investigation and type testing of hemp wool and mixed hemp wool yarns. By Prof. Dr. Johannsen and Dipl. Ing. Meyer, Jul 1940. In German. 2.50

621-627 PB L 70415 — Processing tests with hemp wool and various rayon staples. By Prof. Dr. Johannsen, Jun 1942. In German. 1.50

628-631 PB L 70415 — Cutting of hemp wool. By Dr. F. Walz, Jun 1942. In German. 1.50

632-633 PB L 70415 — Wood content of hemp wool. By Dipl. Ing. W. Meyer, Jun 1942. In German. 1.50

633-635 PB L 70415 — Processing values and quality of determination of hemp wool. By Dipl. Ing. W. Meyer, Jun 1942. In German. 1.50

636-666 PB L 70416 — Determining the quality value of S-rayon staple. Oct 20, 1942. In German. 3.50

667-668 PB L 70415 — Tests with "Vistra" fiber. Sep 28, 1940. In German. 1.50

669-670 PB L 70415 — Fabric tests with regard to bursting strength and resistance to scraping. By Dr. Schiele, Aug 22, 1940. In German. 1.50

671-678 PB L 70415 — Comparison between fiber tensile strength fabric resistance to scraping and fiber grinding number. By Dr. Rubert, Sep 28, 1940. In German. 1.50

679-687 PB L 70415 — Determining resistance to scraping of single fibers. By Dr. Coordt, Sep 7, 1940. In German. 1.50

687-692 PB L 70415 — Meeting report on the quality of rayon staple. By Dr. Beiser, Aug 15, 1940. In German. 1.50

693-700 PB L 70415 — Quality determination of rayon staple. Jun 28, 1940 - Aug. 16, 1940. In German. 1.50

701-708 PB L 70415 — Quality determination of textile fibers on a mathematical basis. By Dr. Maikal, Mar 28, 1940. In German. 1.50

709-713 PB L 70415 — Benzoylated "XI" fiber. By Dr. Coordt, Jul 2-3, 1940. In German. 1.50

714-715 PB L 70415 — Investigation of "highly wet-resistant Vistra" and "Vistra WW." Jun 10, 1940. In German. 1.50

716-720 PB L 70415 — Quality determination of rayon staple. Jan 20, 1940. In German. 1.50

721-786 PB L 70415 — Quality testing of textile fibers. By Dr. Coordt, and Dr. Schiele. Feb 17, 19, 29, 1940. In German. 6.50

787-790 PB L 70415 — Looping strength of rayon staple. By Dr. Coordt, Nov 27, 1939. In German. 1.50

791-793 PB L 70415 — Curling durability of rayon staple. By Dr. Coordt, Nov 2, 1939. In German. 1.50

794-796 PB L 70415 — Knot and loop strength of rayon staple. By Dr. Coordt, Oct 31, 1939. In German. 1.50

797-804 PB L 70415 — Rayon staple splintering strength and width swelling of soapy fibers. By Dr. Coordt, Oct 28, 1939 - Dec 21, 1939. In German. 1.50

805-810 PB L 70415 — Strength of knots and loops. Oct 24, 1939. In German. 1.50

811-822 PB L 70415 — Durability of curling. Oct 24, 1939. In German. 1.50

823-830 PB L 70415 — Methods for determining the quality of rayon staple. By Dr. Schiele, Oct 24, 1939. In German. 1.50

831-833 PB L 70415 — Bleaching and washing directions for the examination of the fastness to washing of white rayon staple fabrics. Aug 19, 1939. In German. 1.50

834-843 PB L 70415 — Manufacture and testing methods of standard fabrics. Jun 22, 1939. In German. 1.50

844-846 PB L 70415 — Testing the scraping and bursting strength of standard fabrics. Jun 12, 1939. In German. 1.50

847-853 PB L 70415 — The damaging effect of disinfectants on fabrics. Dec 6, 1939. In German. 1.50

854 PB L 70415 — Breaking strength of single fibers. By Dr. Schiele, Mar 8, 1939. In German. 1.50

855-860 PB L 70415 — Rayon staple diagrams. n. d. In German. 1.50

861-862 PB L 70415 — Minimum requirements for rayon staple. By Dr. Schiele, Feb 8, 1939. In German. 1.50

863-905 PB L 70415 — Fully synthetic fibers. n. d. In German. 5.00

906-932 PB L 70415 — "Schopper" strength tester for textile fibers. By Louis Schopper, n. d. In German. 3.00

PB L 70415-S. I. G. FARBENINDUSTRIE A. G., BOBINGEN/BAYERN, GERMANY. Reports on finishing of textiles and the manufacture of synthetic fibers. (FIAT Microfilm Reel E 12, Frames 1-932, abstract cards) 1936-1943. 96 p. Price: Microfilm-$2.00 - Photostat-$7.00
Brief abstracts of the individual items on the above reel E 12, PB L 70415, prepared by FIAT personnel in Germany.

PB L 81823. U. S. QUARTERMASTER CORPS. Treatment of Army socks for shrink resistance by the Quartermaster Corps. (Textile Series Rept 46). Aug 1947. 62 p. Price: Mimeo-$1.50
This report on shrink-resistant treatment of Army wool socks was prepared in part at the end of the war as a history of Quartermaster work on the prevention of shrinkage of wool. While originally intended primarily as a summary of the detailed data for their own records, it was later considered that it should be made public as soon as it was possible to prepare the material in proper form for public release. This report gives in detail laboratory investigation of treatments, tests and final results. The text is supplemented by illustrations, charts and tables.

PB L 80617. U. S. WAR DEPARTMENT. Inspection of textiles, (with changes no. 1, Sep. 12, 1944). (Tech Manual 10-225). Aug 1940. 94 p. Price: Microfilm-$2.00 - Photostat-$7.00 (Available from the Supt of Docs. Washington 25, D. C., 15¢).

MISCELLANEOUS

PB L 73406. ERLANGEN, GERMANY. UNIVERSITY. Doctors' dissertations in natural sciences. (FIAT Microfilm Reel I 278, Frames 213-1150). 1938-1940. 732 f. Price: Microfilm-$6.00 - Enlargement print-$73.50.
This reel was prepared by FIAT investigators in Germany. 29 individual items are listed below and will be available as enlargement prints. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
212-288 PB L 73406	Contributions to the knowledge of the homogeneous catalysis of iron. By Nami Serdaroglu. 1940. In German.	$8.00
289-327 PB L 73406	Physical-chemical investigations with antimonic acid. By Heinz Viehweger. 1938. In German.	4.00
328-338 PB L 73406	The dipole moments of some organic substances. By Rudolf Linke. 1940 In German.	1.50
339-376 PB L 73406	Investigations with ring pumps (Side-channel pumps). By Heinrich Engels. 1940. In German.	4.00
377-386 PB L 73406	Intensity conditions in sodium lamps supplied with alternating current. By Wilhelm Going. 1940. In German.	1.50
387-431 PB 1 73406	These frame numbers are missing.	
432-446 PB L 73406	Bridge for measuring the natural frequency of ultrasonic quartzes. By Hans-Erich Koch. 1940. In German.	1.50
447-503 PB L 73406	These frame numbers are missing.	
504-532 PB L 73406	The earth pressure on a wall yielding at its lower part. By Wilhelm Hecke. 1939. In German.	3.00
533-588 PB L 73406	The natural wind and its effect on a large circular cylinder. By Walter Pechstein. 1940. In German.	6.00
589-636 PB L 73406	Investigations regarding the protection of detached wooden buildings against fungi. By Erich Schulke. 1940. In German.	5.00
637-678 PB L 73406	These frame numbers are missing.	
679-695 PB L 73406	The stereomers 1,3-diaminocyclohexanes. By Wolfgang Ziegler. 1940. In German.	2.00
696-748 PB L 73406	The Italian literature on the motion of isolated whirls and isolated sources in two-dimensions. By Richard Wehner. 1939. In German.	5.50
749-773 PB L 73406	The constitution of pyrrole blue. By Helmut Wilhelm. 1940. In German.	3.50
774-809 PB L 73406	Cathode sputtering. By Alfred Winter. 1940. In German.	4.00
810-835 PB L 73406	The equalization of mortality tables under special consideration of the weights of the individual persons observed. By Joachim Zapf. 1940. In German.	3.00
836-858 PB L 73406	Measurements with the cathode ray oscillograph for the purpose of clearing up occurrences with leakage discharges. By Gotthard Fischer. 1940. In German.	3.50
859-875 PB L 73406	The "inorganic benzene" $B_3N_3H_6$. By Arthur Bolz. 1938. In German.	2.00
876-886 PB L 73406	The pectin substances of flax. By Ruth Einsele. 1939. In German.	1.50
887-901 PB L 73406	Shortened calculations of torsional vibrations by means of auxiliary mass and auxiliary force. By Berthold Frank. 1940. In German.	1.50
902-944 PB L 73406	Circular processes of gas turbines and experiments toward their realization. By Rudolf Fuchs. 1939. In German.	4.50
945-975 PB L 73406	The analysis of prepared meat products, especially of sausage with regard to the employed raw- and additional substances containing albumen. By Alfons Patschky. 1939. In German.	3.50
976-990 PB L 73406	The knowledge of the reactions in washing raw wool. By Horst Rudolph. 1938. In German.	1.50
991-1016 PB L 73406	The configuration of the sound field of circular piston membranes. By Alexander Thoma. 1940. In German.	3.00
1017-1028 PB L 73406	Contributions to the reactivity and the structure of wool keratin. By Helmut Zahn. 1940. In German.	1.50
1029-1069 PB L 73406	Fundamental investigations on the magneto-elastic pressure measuring process. By Theodor Deeg. 1940. In German.	4.50

1070-1122 PB L 73405 — These frame numbers are missing.

1123-1150 PB L 73405 — Investigation of a ton-controlled two cycle engine with direct flow scavenging. By Fritz Drabert. 1939. In German. 3.00

PB L 73406-S. ERLANGEN, GERMANY. UNIVERSITY. Doctors' dissertations in natural sciences. (FIAT Microfilm Reel I 278, Frames 212-1150, abstract cards). 1938-1940. 26 p. Price: Microfilm-$1.00 - Photostat - $2.00. Brief abstracts of the individual items in the above reel I 278, PB 73406, prepared by FIAT personnel in Germany.

PB L 82161. ERLANGEN, GERMANY. UNIVERSITY. Doctors' dissertations in natural sciences. (FIAT Microfilm Reel I-114, Frames 355-1117) 1931-1939. 356 F. Price: Microfilm-$7.00 - Enlargement Print-$37.00 This reel was prepared by FIAT investigators in Germany. 39 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
355-373 PB L 82161	Circular Roman grave in Faleri by Bernt Gotze. In German.	$3.00
374-381 PB L 82161	Determination of position, motion and mass ratio of "Alpha Centauri" a double star according to meridian observations from 1829-1910 by F. Gondolatsch. In German.	2.00
382-391 PB L 82161	Investigating the propagation of electromagnetic waves at a frequency of 120 megacycles by Enno Bussmann. In German.	2.00
392-399 PB L 82161	Structure of the ternary system silver-copper-palladium in a stable state by Fritz Glander. In German.	2.00
400-407 PB L 82161	Energy exchange between translation and rotation due to thrusts by Heinz Haber. In German.	2.00
408-415 PB L 82161	Induction coupling of straight, linear, and parallel wire parts particularly in progressive waves by W. Jachnow. In German.	2.00
416-426 PB L 82161	The influence of space charge in the plane retarding field by Werner Kleinsteuber. In German.	3.00
427-433 PB L 82161	Investigations of high frequency coils with iron cores at variable J C pre-magnetization by Georg Maus. In German.	2.00
434-448 PB L 82161	Chemistry and mechanism of the pyrolysis of ethylene by Martin Schultze. In German.	3.00
449-454 PB L 82161	Measurement of acoustic resistance by Winfried Wisotzky. In German.	2.00
455-469 PB L 82161	Relation between antiknock properties of fuels and motors by Maximilian Marder. In German.	3.00
470-479 PB L 82161	Relation between analytical data and igniting tendency of Diesel fuels by M. Marder. In German.	2.00
480-489 PB L 82161	Determining analytical data of mineral oils based on aerometric measurements by M. Marder. In German.	2.00
490-495 PB L 82161	Trucking as a criterion for the economic structure of traffic regions by Johannes Schlums. In German.	2.00
496-516 PB L 82161	Development of the bearing testing apparatus for various stresses by Ernst Heinrich Barten. In German.	3.00
517-527 PB L 82161	Turning and rolling vibrations of aircraft by Edmund Bartsch. In German.	3.00
528-550 PB L 82161	Tests for preparation of cyclodecapentaene derivatives by Hans Joachim Benecke. In German.	4.00
551-558 PB L 82161	Four-beam cathode ray tube of high indicating velocity by Alfred Bigalke. In German.	2.00
559-576 PB L 82161	RPM standardization and the economic effect on the construction of lathes by Rolf Boehringer. In German.	3.00
577-584 PB L 82161	Theoretical and experimental investigation of the non-linear distortion of carbon microphones by Karl Braun. In German.	2.00
585-611 PB L 82161	Development of port construction in Colonial ports of the African West Coast and East Coast by Heinrich W. V. Butzer. In German.	4.00
612-621 PB L 82161	The aluminum diagram in the ternary system aluminum-iron-manganese by Erich Degischer. In German.	2.00
622-648 PB L 82161	Use and investigation of an aircraft revolving chamber by Wolfram Eschenbach. In German.	4.00
649-660 PB L 82161	Investigations with regard to the pre-determination of the corrosion capacity of fuels by means of laboratory methods by Heinz Farnow. In German.	3.00
661-705 PB L 82161	The influence of additional financial increases on the structure of the electrical economy of a nation with regard to prices for electric energy by Wilhelm Fischer. In German.	6.00
706-731 PB L 82161	Swelling phenomena of lignite by Karl Fritzsche. In German.	4.00
732-765 PB L 82161	Operating force and torque movement of high pressure rotary machinery by Gustav Funk. In German.	5.00
766-780 PB L 82161	Loading hoists on ships having AC control by Rudolf Genths. In German.	3.00
781-793 PB L 82161	Investigating the impact strength of construction lumber by Nicolae Ghelmeziu. In German.	3.00
794-806 PB L 82161	Influence of wing loading, aspect ratio and span stresses with regard to flight performance, by Bernhard Göthert. In German.	3.00
807-895 PB L 82161	Price development in the consumer group "Gewerbeckraft" by Günther Hartmann. In German.	10.00
896-937 PB L 82161	Ultra violet absorption of aromatic hydrocarbons based on the determination of aromatic substances in gasoline and fuel oil by Radnar Hauan. In German.	6.00

938-942 PB L 82161 — Corrosion of pure lead and low alloyed lead by Oskur Heckler. In German. 2.00

943-950 PB L 82161 — Transformation between aluminum and oxygen in iron melts by Georg Hieber. In German. 2.00

951-956 PB L 82161 — Appearance of cyanides during the azotization of calcium carbide by Waldemar Kendler. In German. 2.00

957-980 PB L 82161 — Dynamic tests of tool making machinery frames by Hans Kettner. In German. 4.00

981-1103 PB L 82161 — Investigation of the optimum shapes for shovels by Gustav Kirsch. In German. 14.00

1104-1111 PB L 82161 — Dependence of temperature toughness relationships of acidic blast furnace slags on their chemical composition by Rudolf Kley. In German. 2.00

1112-1117 PB L 82161 — Mechanics of the reaction between hydrogen and carbon in iron by Bernhard Knapp. In German. 2.00

PB L 82156. ERLANGEN, GERMANY, UNIVERSITY. Doctors' dissertations in various fields. (FIAT Microfilm Reel F-115, Frames 1118-1917) 1938-1939. 800 f. Price: Microfilm-$7.00 - Enlargement Print-$81.00

This reel was prepared by FIAT investigators in Germany. 31 individual items are listed below and will be available as enlargement prints. The entire reel will be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1118-1148 PB L 82156	Surface quality and timing during circular cutting in clockwise or counterclockwise operation by Walter Koenig. In German.	$5.00
1149-1158 PB L 82156	Investigations of wood and various types of plywood with regard to use in the aircraft industry by Wilhelm Kuch. In German.	2.00
1159-1168 PB L 82156	Measurements of waiting periods in long distance traffic by means of a special installation and investigation of secondary losses during the waiting periods by Josef Lennertz. In German.	2.00
1169-1183 PB L 82156	Quantitative determination of aromatic substances in gasoline by means of the "UV absorption" by Leodegar Liehmann. In German.	3.00
1184-1225 PB L 82156	Mechanics of the curved motion of dredges and conveyors with caterpillar tracks, by Günther Lindenau. In German.	6.00
1226-1256 PB L 82156	Investigations of axle bearings made of pressed material for track vehicles by Heinrich Mikelt. In German.	5.00
1257-1285 PB L 82156	Development of a dynamic test bench for connecting rods by Heinz Meyer. In German.	4.00
1286-1313 PB L 82156	Rainwater reservoir for municipal canalization by Günter Müller. In German.	4.00
1314-1327 PB L 82156	Calculation control and application of some functions similar to Bessel functions with remarks on the subject of Bessel functions by Reinhard Miller.	3.00
1328-1348 PB L 82156	Evaluation of train forming installations of a shunting station according to task and operation by Hermann Nebelung. In German.	4.00
1349-1382 PB L 82156	Psychotechnical aptitude testing and training for the construction of airplane motors by Erich Neumann. In German.	5.00
1383-1400 PB L 82156	Behavior of adsorbed fluid film under pressure by Hans Neumann. In German.	3.00
1401-1410 PB L 82156	The function of aluminum in the ternary system aluminum-copper-manganese by Hans-Gerhard Petri. In German.	2.00
1411-1427 PB L 82156	Shearing strength of various cohesive soils by Hamdi Peynircioglu. In German.	3.00
1428-1437 PB L 82156	Mixing of irregular telephone values, by L. A. Pischetsrieder. In German.	2.00
1438-1448 PB L 82156	Low pressure carbonization of lignite by means of the heating surface method and rinsing gas process by Franz Pohl. In German.	3.00
1449-1459 PB L 82156	Investigations of the alternate multiplex transmission by Herbert Raabe. In German.	3.00
1460-1470 PB L 82156	Reciprocal reaction between molten aluminum and some of its alloys and hydrogen by Hans-Wilhelm Retzlaff. In German.	3.00
1471-1590 PB L 82156	Amplifier choke coil by Kurt Reuss. In German.	3.00
1591-1613 PB L 82156	Experimental and theoretical investigations of measures of the highly frequent interference capacity of high tension insulators by Wolfgang Rohjahn. In German.	4.00
1614-1630 PB L 82156	Short circuits in multiple fed meshed networks by Artur Scheib. In German.	3.00
1631-1657 PB L 82156	Stratigraphy and tectonics of the "Kalkwerk Niedersachsen" with particular consideration of potassium deposits of the more recent salt layers, by Alexander Schmidt. In German.	4.00
1658-1694 PB L 82156	Relation between vinylamines and isoquinolines by Karl H. Schmidt. In German.	5.00
1695-1719 PB L 82156	Selection and training of unemployed for the wartime aircraft industry by Otto Schmidt. In German.	4.00
1720-1746 PB L 82156	Time fuze and spinning motion of the projectile by Fritz Schmitt. In German.	4.00
1747-1811 PB L 82156	Thorough investigation of reaction products between graphite and ferric chloride free of water by Herbert Schulz. In German.	8.00
1812-1827 PB L 82156	Production of lignite extract and its use as a solid fuel as well as a new method for determining the ignition point of solid fuels by Konrad Siebert. In German.	3.00

1828-1834 PB L 82156 — Iteration method for the analysis of interferences of cylinder shells by Hans Simon. In German. 2.00

1835-1859 PB L 82156 — Basis of a theory of systems for gas discharge lamps by Helmar Stransch. In German. 4.00

1860-1884 PB L 82156 — The wave theory of "Stokes" by Wo-hsing Tschen. In German. 4.00

1885-1917 PB L 82156 — The application of AC for auxiliary ship installations by Friedrich Ufer. In German. 5.00

PB L 74867. ERLANGEN, GERMANY, UNIVERSITY. Doctors' dissertations in natural sciences. (FIAT Microfilm Reel F-116, Frames 1918-2698) 1927-1939. 781 f. Price: Microfilm-$6.00 - Enlargement Print-$78.50
This reel was prepared by FIAT investigators in Germany. 40 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1918-1933 PB L 74867	Aluminum of the ternary system Aluminum-Nickel-Silicon by Ernst Wolsse, 1939. In German.	$2.00
1934-2076 PB L 74867	Electrification of Berlin city and suburban railways and its political economic significance, by Ernst Winkler, 1930. In German.	14.50
2077-2136 PB L 74867	Operational investigations concerned with conversion of steam hammers to compressed air operation by Karl August Wölbling, 1927. In German.	6.00
2137-2145 PB L 74867	Elliptical lift distribution through warp and profile modification by Shih Cheng Zien, 1937. In German.	1.50
2146-2151 PB L 74867	Theory of the "Voith Schneider" propeller by Walter Just, 1937. In German.	1.50
2152-2160 PB L 74867	Properties of iron-chromium-carbon alloys with a high chromium and carbon content by Heins Gross, 1928. In German.	1.50
2161-2169 PB L 74867	Investigations of mixing processes during the production of tar macadam by Lothar Haupt, 1938. In German.	1.50
2170-2179 PB L 74867	Calculation of lift distribution in the direction of the chord for biplanes by Kurt Jaekel, 1939. In German.	1.50
2180-2201 PB L 74867	Investigations of the limits of the coal fields in "Oberschlesien" by Leonhard Kirschnick, 1938. In German.	2.50
2202-2207 PB L 74867	The quantitative analysis of saturated paraffin hydro carbons by means of adsorption and desorption by Horst Luther, 1939. In German.	1.50
2208-2222 PB L 74867	The softening of pit coal during heating by Heinrich Macura, 1939. In German.	2.50
2223-2287 PB L 74867	Soil grain surface and water accumulation factor and their relations to permeability and other physical soil properties by Andrzej Piotrowski, 1939. In German.	6.50
2288-2307 PB L 74867	Silage by means of biological additions by Siegfried Preiss, 1939. In German.	2.00
2308-2319 PB L 74867	Under what conditions are two given conical sections in the working plane the imaginary outlines of two spheres at a central projection from the same viewpoint, and how are problems of such conical sections solved on the basis of this relationship? Presented by Alfred Führinger, 1938. In German.	1.50
2320-2325 PB L 74867	Testing the cutting capacity of various metals by means of the "Zweistahl" method by Franz Schicha, 1939. In German.	1.50
2326-2341 PB L 74867	Gas changing process and limits of the valve four cycle-operation of airplane motors by Reinhard Schmidt, 1939. In German.	2.00
2342-2351 PB L 74867	The torque moment of nonsynchronous motors at the startup with unsymmetrical rotor resistances by Adolf Krehmann, 1939. In German.	1.50
2352-2357 PB L 74867	Magnetic measurements of alkali metal amalgams by Bruno Hauschulz, 1939. In German.	1.50
2358-2364 PB L 74867	The internal friction in quarts crystals by Richard Gunther, 1939. In German.	1.50
2365-2385 PB L 74867	Accuracy of determining production costs in the manufacture of machinery by means of various calculation methods by Hans Jaenisch, 1939. In German.	2.50
2386-2394 PB L 74867	Mineral tanning particularly cobalt tanning by Lothar Kludzynski, 1939. In German.	1.50
2395-2401 PB L 74867	Magnetic investigations on the adsorption of oxygen on carbon, and other sorption processes by Robert Langheim, 1938. In German.	1.50
2402-2413 PB L 74867	Investigation of the heat radiation of flames by Johannes Werneburg, 1939. In German.	1.50
2414-2425 PB L 74867	Production of light by ionic and atomic bombardment by Werner Maurer, 1939. In German.	1.50
2426-2434 PB L 74867	Piezo electric measurements of a free jet turbine by Hanns Eilken, 1938. In German.	1.50
2435-2449 PB L 74867	Investigations of the stationary condition of catalysts at heterogeneous reactions by Karl Hauffe. 1938. In German.	1.50
2450-2457 PB L 74867	Investigations of mixed adsorption by Franziska Teller, 1938. In German.	1.50
2458-2467 PB L 74867	Precision measuring device of the moving iron type by Heinrich Toeller, 1939. In German.	1.50
2468-2484 PB L 74867	Investigations of briquetting, without any additions, of earthy lignites by Karl Rivetter, 1938. In German.	2.00
2485-2492 PB L 74867	Electron-optical image defects of the third degree by Heinrich Volt, 1939. In German.	1.50
2493-2528 PB L 74867	Aging phenomena and molecular sizes of chain complexes in solution by Wilhelm Wehr, 1939. In German.	4.00
2529-2532 PB L 74867	Electrical investigations of fibers for spinning by Fritz Woldmann, 1938. In German.	1.50

2532-2534 PB L 74867 — Method for measuring high insulation resistances of plastics by Fritz Meidmann, 1938. In German. 1.50

2535-2548 PB L 74867 — Synthesis of two-dimensional and three-dimensional crank mechanisms by Rudolf Beyer, 1937. In German. 1.50

2549-2563 PB L 74867 — Approximate calculation of frame work vibrations of articulating and rigid bar joints by Rudolf Arendt, 1939. In German. 1.50

2564-2569 PB L 74867 — Influence of spark length and electrode material on the gap enlargement due to ultraviolet illumination with pulse discharges by Martin Arnold, 1939. In German. 1.50

2570-2592 PB L 74867 — Theory of biquadratic equations of two-dimensional tangental transformations; singularities of transformation curves by Johannes Geissler, 1939. In German. 2.50

2593-2619 PB L 74867 — Correction for rake in screw threads by Rudolf Heimberger, 1939. In German. 3.00

2620-2662 PB L 74867 — Purification velocity, dialysis potential and neutrality disturbances on charged permeable membranes by Carl Kalaneh, 1939. In German. 4.50

2663-2698 PB L 74867 — Electrical processes in high frequency smelting installations with revolving spark gap and their importance for proper operation by Wen-Isai-Li, 1938. In German. 4.00

PB L 74857. ERLANGEN, GERMANY, UNIVERSITY. Doctors' dissertations in various fields. (FIAT Microfilm Reel F-117, Frames 2699-3454) 1933, 1935-1936, 1938-1939. 756 f. Price: Microfilm-$6.00 - Enlargement Print-$76.00

This reel was prepared by FIAT investigators in Germany. 38 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
2699-2711 PB L 74857	Table of data of the "ln gamma" function with complex argument, by Walter Meissner, 1939. In German.	$1.50
2712-2729 PB L 74857	Substances in the Butyrospermum parkii seed (shea nuts), by Heinrich Moll, 1939. In German.	2.00
2730-2734 PB L 74857	Adsorption and heat of adsorption of ammonia on silica gel depending on pressure and temperature by Rudolf Schubert, 1938. In German.	1.50
2735-2750 PB L 74857	Influence of mercerization on the elimination of the incrustation of the raw bast of flax and hemp by Werner Schulz, 1939. In German.	2.00
2751-2776 PB L 74857	Investigating the splitting of wood by Alfred Schwankl, 1939. In German.	3.00
2777-2795 PB L 74857	The continental and oceanic air pressure development by Karl Seifert, 1939. In German.	2.00
2796-2846 PB L 74857	Classifying of machinery tubes by Otto Stahl, 1938. In German.	5.50
2847-2933 PB L 74857	The possibility of simultaneous organization of the factory and its personnel by Gerd Vibrig, 1939. In German.	9.00
2934-2940 PB L 74857	"Kaffeekohle" (substance produced by partial charring of coffee beans) by Auguste Link, 1939. In German.	1.50
2941-2949 PB L 74857	Carrier frequency-differential circuits by Otto Schäfer, 1938. In German.	1.50
2950-2955 PB L 74857	Strength properties of gray cast iron depending on wall thickness and the position in the cast iron diagram and the influence of the alloying metals, i. e., nickel, molybdenum and chromium on the structure and strength properties of cast iron by Karl Appel, 1935. In German.	1.50
2956-2964 PB L 74857	Classification of alloyed cast iron by H. Uhlitzsch and K. Appel, 1939. In German.	1.50
2965-2989 PB L 74857	Investigating the effect of flow regulators behind bends by Werner Beck, 1939. In German.	2.50
2990-3008 PB L 74857	The perfect formation of Pb and Pb-Sb alloys by Heinz Benad, 1939. In German.	3.00
3009-3018 PB L 74857	The static bending test of electric welds based on DIN 4100 by Georg Kendl, 1939. In German.	1.50
3019-3038 PB L 74857	The influence of bitumens, which are soluble in benzene under pressure, on the coking and degasification properties of pit coal by Otto Rossow, 1938. In German.	2.00
3039-3044 PB L 74857	Determining the effect of the unevenness of highways on the passengers of motor vehicles by H. W. Koch, 1939. In German.	1.50
3045-3069 PB L 74857	Investigating the stress condition in a lathe tool cutting edge under polarized light by Paul Dietrich, 1938. In German.	2.50
3070-3091 PB L 74857	Determination of elastic-plastic and optical properties of plastics by Kurt Frohlich, 1939. In German.	2.50
3092-3114 PB L 74857	Dependence of the eroding motion on grain shape and temperature by Ho Pang-Kung, 1939. In German.	2.50
3115-3145 PB L 74857	Stone works in the city of Osnabrück by Adolf Ide, 1939. In German.	3.50
3146-3199 PB L 74857	The crank mechanism as a means for the operation of shaking troughs by Rudolf Koeltzsch, 1939. In German.	5.50
3200-3213 PB L 74857	Flow conditions on steep-angled and stalled wings with a high angle of pitch at a parallel motion and twist by Max Kohler, 1938. In German.	1.50
3214-3228 PB L 74857	Experimental determination of two-dimensional stress conditions by means of the "Timpe" plate equation by Ernst Lammerz, 1939. In German.	1.50
3229-3289 PB L 74857	The importance of free radicals in the oxidation of n-heptane by Robert Wiess, 1939. In German.	1.50

3240-3246 PB L 74857 — The antimony electrode in pH measurements by Kurt Fischbeck and Franz Eimer, 1938. In German. 1.50

3247-3260 PB L 74857 — The earth pressure distribution on overhead line poles set into natural ground and the effect on their stability by Karl Kohler, 1938. In German. 1.50

3261-3269 PB L 74857 — Construction of an electric instrument for use on board an aircraft using the moving coil principle by Wilhelm Fischer, 1939. In German. 1.50

3270-3321 PB L 74857 — The fortification of Ingolstadt up to the "Thirty Years War" by Reinhard Fuchs, 1938. In German. 5.50

3322-3327 PB L 74857 — Conductivity measurements by means of the heterodyning method by Ernst Guggolz, 1939. In German. 1.50

3328-3349 PB L 74857 — Investigating the flow through a vane-wheel turbine with various numbers of blades by Karl Hahn, 1933. In German. 2.50

3350-3363 PB L 74857 — New observations for the explanation of gas production from hard coal by Hans Imhof, 1938. In German. 1.50

3364-3377 PB L 74857 — Behavior of fats during storing particularly considering the fat fraction of roastable barley and malt by Josef Köchling, 1938. In German. 1.50

3378-3386 PB L 74857 — Measurements of very variable cylinder wall temperatures by Adolf Meier, 1938. In German. 1.50

3387-3395 PB L 74857 — The transmission of heat on the vertically sprayed pipe by Theodor Sexauer, 1938. In German. 1.50

3396-3423 PB L 74857 — Investigating the flows produced by a stable propeller by Walter Stiess, 1935. In German. 3.00

3424-3444 PB L 74857 — Pressure measurements on an impeller of a vaned-wheel turbine having different numbers of blades by Erich Walter, 1938. In German. 2.50

3445-3454 PB L 74857 — Heating efficiency at autogenous hardening of acetylene-oxygen flames and illuminating gas-oxygen flames by Erich Zorn, 1939. In German. 1.50

PB L 82148. ERLANGEN, GERMANY, UNIVERSITY. Doctors' dissertations in natural sciences. (FIAT Microfilm Reel F-122, Frames 7066-7980) 1939-1940. 914 f.
Price: Microfilm-$7.00 - Enlargement Print-$98.00
This reel was prepared by FIAT investigators in Germany. 25 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $7.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
7066-7135 PB L 82148	Origin and practical importance of the "Mansard" roof by Fauler Schüler. In German.	$8.00
7136-7154 PB L 82148	Method of decreasing the strain on the telephone transformer for the purpose of widening the frequency band by Karl Schultz. In German.	3.00
7155-7192 PB L 82148	Investigation of a sand buffer used for mining cars by Gerd Selter. In German.	5.00
7193-7207 PB L 82148	Properties and composition of cosmic rays penetrating through concrete plates by Evangelie Spanidis. In German.	3.00
7208-7284 PB L 82148	Planned cost accounting by Hellmut Steinmann. In German.	9.00
7285-7324 PB L 82148	Determination of the internal orientation and distortion of circular images by Josef Sutor. In German.	5.00
7325-7364 PB L 82148	Manufacture of synthetic fibers of casein by Ernst Swatek. In German.	5.00
7365-7382 PB L 82148	Tension due to nitration and the effect on the alternating bending strength by Erich Theis. In German.	3.00
7383-7415 PB L 82148	Combustion, gasification and slagging, by Sergei Traustel. In German.	5.00
7416-7447 PB L 82148	Devices for maintaining a regular tension on the film during reeling with special consideration of cinematographic requirements by Heinrich Voigt. In German.	5.00
7448-7487 PB L 82148	Model laws and similarity conditions for a complete and practically complete similarity of static elasticity problems by Helmut Weber. In German.	5.00
7488-7532 PB L 82148	Privileges of the university of Helmstedt and suppression by the city from 1576-1810 by Bernol Becker. In German.	13.00
7533-7550 PB L 82148	Irreversible variations of the electric resistance and reflection property of antimony, arsenic, tellurium, iron and silver layers condensed at low temperatures, by Wolfgang Berndt. In German.	3.00
7551-7577 PB L 82148	Studies of dehydrogenation of propane by Rudolf Herrmann. In German.	4.00
7578-7585 PB L 82148	Determination of the efficiency of resonance telephones by Herbert Brass. In German.	2.00
7586-7610 PB L 82148	Investigations in the methane series by Heinrich Niggemeyer. In German.	4.00
7611-7642 PB L 82148	Surface stress of some interesting metallurgical systems by Friedrich Polka. In German.	5.00
7643-7711 PB L 82148	Effects on laundry treated in the hot mangle by Heinz Piest. In German.	8.00
7712-7762 PB L 82148	Preparation of leucopyrite containing gold from Reichenstein-Schlesien by Günther Salzmann. In German.	7.00
7763-7791 PB L 82148	Physical properties of heterocyclic five-membered rings and their solutions by Edmund Simmenbach. In German.	4.00
7792-7822 PB L 82148	Brittleness, plasticity, and gliding elements of a-iron and the dependence on gliding surfaces by Hans-Georg Sassinka. In German.	5.00
7823-7840 PB L 82148	The influence of catalysts on the dehydrogenation of butane by Alexandru Vladeanu. In German.	3.00
7841-7873 PB L 82148	Studies on the dehydrogenation and separation of ethane by Pao-Teh Wan. In German.	5.00

Miscellaneous (contd)

7874-7937 PB L 82148 — Calculation of multi-staged cyclic symmetrical voluminar polygon frames with voluminar rigid anchor ring by Joachim Hans Weber. In German. 8.00

7938-7980 PB L 82148 — Hexafluoracetone and hexafluordimethylamine by Werner Willenberg. In German. 6.00

PB L 74092. I. G. FARBENINDUSTRIE A. G., BITTERFELD, GERMANY. Economic reports on various countries. (FIAT Microfilm Reel CC 185, Frames 1-961). 1938-1940. 961 f. Price: Microfilm-$6.00- Enlargement print-$96.50.
This reel prepared by FIAT investigators in Germany covers the economic structure of Argentina, Afghanistan, Egypt, Belgium, Brazil, Belgium, and Colombia as compiled by the political economics department of I. G. Farbenindustrie. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-180 PB L 74092.	Economic reports on Argentina. In German.	$18.00
181-281 PB L 74092	Economic reports on Afghanistan. In German.	10.50
282-396 PB L74092	Economic report on Egypt. In German.	11.50
397-530 PB L 74092	Economic report on Belgium. In German.	13.50
531-710 PB L 74092	Economic report on Brazil. In German.	18.00
711-811 PB L 74092	Economic report on Bulgaria. In German.	10.50
812-961 PB L 74092	Economic report on Colombia. In German.	15.00

PB L 74155. I.G. FARBENINDUSTRIE A.G., BITTERFELD, GERMANY. Economic reports on various countries. (FIAT Microfilm Reel CC 188, Frames 2827-3798). 1937-1946. 972 F. Price: Microfilm-$6.00 - Enlargement print-$97.50.
This reel prepared by FIAT investigators in Germany covers the economic structure of Sweden, Czechoslovakia including Sudetenland, Thailand, Switzerland and Turkey, as compiled by the political economics department of I. G. Farbenindustrie. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
2827-2891 PB L 74155	Economic report on Sweden. In German.	$6.50
2892-3061 PB L 74155	Economic report on the "Sudetenland" annexed by Germany.	17.00
3062-3147 PB L74155	Economic report on Thailand. In German.	9.00
3148-3345 PB L 74155	Economic report on Switzerland. In German.	20.00
3346-3468 PB L 74155	Economic report on Czechoslovakia. In German.	2.50
3469-3798 PB L 74155	Economic report on Turkey. In German.	3.00

PB L 70251. I.G FARBENINDUSTRIE A.G., FRANKFURT AM MAIN-HOECHST, GERMANY. Reports in chemistry, chemical engineering, metallurgy and machinery. (FIAT Microfilm Reel A-28, Frames 4532-5348) (See also FIAT Microfilm Reel A 29, PB 70252) 1936-1944. 816 f. Price: Microfilm-$6.00 - Enlargement Print-$82.00
This reel was prepared by FIAT investigators in Germany. 62 individual items are listed below and will be available as enlargement prints. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
4532-4536 PB L 70251	New column designs. By Hartmann. Jun 18, 1943. In German.	$1.50
4537-4551 PB L 70251	Distilling column design. By Ammann. Apr 1944. In German.	1.50
4552-4571B PB L 70251	Continuous pure distillation of Buna spirit for fuel purposes. By Steinmetz. Dec 20, 1937. In German.	2.50
4571-4572 PB L 70251	Types of continuous distillation installations in the Schkopau plant. By Ammann. Nov 11, 12, 1940. In German.	1.50
4573-4574 PB L 70251	The effect of the rectifying column in the vacuum field. By Kirschbaum. 1939. In German.	1.50
4575-4581B PB L 70251	Tests of small packing columns. By Zbinden. Jun 4, 1942. In German.	1.50
4582-4587 PB L 70251	Packing for distilling columns. By Krausseld. Jun 8, 1942. In German.	1.50
4588-4595 PB L 70251	Arrangement for filling of packing columns and contact furnaces. By Himmelhan. Aug 2, 1939. In German.	1.50
4596-4641B PB L 70251	Distribution of liquid in packing columns. By Zimpelt. Feb 13, 1939. In German.	5.00
4642-4664 PB L 70251	Calculation of distillations systems for the separation of multi-substance mixtures. By Grosse. Apr 1944. In German.	2.50
4665-4686 PB L 70251	Large scale distillation. By Baumann. May 24, 1943. In German.	2.50
4687-4703 PB L 70251	Conversion percentages in the distilling technique and nomograms for two-substance mixtures. By Meier. Mar 16, 1944. In German.	2.00
4704-4720 PB L 70251	Lead tests on bubble cap bottom columns with pieces of packing. By Hillemann. Feb 7, 1944. In German.	2.00
4721-4722 PB L 70251	Oxethylation in the vibration column. By Schmieder. Jun 1, 1939. In German.	1.50
4723-4725 PB L 70251	Experiences with Heckmann columns. By Kutsch. May 15, 1939. In German.	1.50
4726-4741 PB L 70251	Distilling column of the Bitterfeld type. By Röcke. Jun 20, 1940- Jan 21, 1941. In German.	2.00
4742-4752 PB L 70251	Welding with austenitic electrodes. By Dümpelmann. Sep 29, 1937. In German.	1.50
4753-4769 PB L 70251	Electrically welded V2A-tubes. By Dümpelmann. Mar 14, 1938. In German.	2.00

4770-4782 PB L 70251 — New welding torch for cutting tubes. By Kube. Dec 12, 1938. In German. 1.50

4783-4804 PB L 70251 — Vibrations in chimneys. By Steinhell. Aug 20, 1936. In German. 2.50

4806-4807 PB L 70251 — Flooring with electric conductivity. Oct 22, 1938. In German. 1.50

4808-4814 PB L 70251 — Recovery of solvents. By Einsler. Jan 8, 1940. In German. 1.50

4815-4819B PB L 70251 — Condenser system for hydrochloric acid. By Weber. Mar 16, 1938. In German. 1.50

4820-4832 PB L 70251 — Flow investigations in a tube with water and air in accurate current. By Matz. Sep 21, 1938. In German. 1.50

4833-4837 PB L 70251 — Test generator for acetaldehyde. By Matz. May 5, 1941. In German. 1.50

4837A-4837C PB L 70251 — Purification of solvent vapors. May 29, 1941. In German. 1.50

4838-4839 PB L 70251 — Recovery of acetic acid vapors. Jan 30, 1939. In German. 1.50

4840-4888 PB L 70251 — Mixed adsorption of carbon dioxide and ethylene. By A. Magnus. In German. 5.00

4889-4905 PB L 70251 — Production of monovinylacetylene free of divinylacetylene by adsorption. By Dietrich and Jockusch. Aug 13, 1938. In German. 2.00

4906-4917 PB L 70251 — Adsorption of a gas mixture of monovinylacetylene and chloroprene on active carbon (TD-carbon). By Dietrich. May 19, 1938. In German. 1.50

4918-4922 PB L 70251 — Separation of liquid mixtures by thermodiffusion. By Matz. Aug 10, Sep 20, 1940. In German. 1.50

4923-4926 PB L 70251 — Rotary columns. By Klar. Mar 2, 1944. In German. 1.50

4927-4954 PB L 70251 — Flow control and the separation of liquids on column bottoms. Apr 1941. In German. 3.00

4955-4982 PB L 70251 — Pressure losses and limits of load capacity in the case of rectifying bottoms. In German. 3.00

4983-4984 PB L 70251 — Tool post for cutting-off tools. By Einsler. Oct 28, 1943. In German. 1.50

4985-4988 PB L 70251 — Welding of nickel-plated sheet. By Buchmann. Apr 22, 23, 1937. In German. 1.50

4989-4999 PB L 70251 — Automatic tube welding machines. By Gilbert. May 23, Sep 2, 1940. In German. 1.50

5000 PB L 70251 — Travelling grates for high air temperatures. By Speidel. Oct 25, 1937. In German. 1.50

5001-5012 PB L 70251 — Softening of boiler feed water. Dec 9, 1937. In German. 1.50

5013-5015 PB L 70251 — Reduction stations for high-pressure installations. Sep 25, 1943. In German. 1.50

5016-5030 PB L 70251 — Construction and operational materials for extreme pressure boilers. By Koch. Jun 10, 1938. In German. 1.50

5031-5065 PB L 70251 — Experiences encountered while placing a 120 atm. gauge pressure Schmidt boiler installation into operation. By Wolf. Jun 9, 10, 1938. In German. 3.50

5066-5071 PB L 70251 — Tube damages on a Loeffler boiler. By Speidel. May 20, 1941. In German. 1.50

5072-5076A PB L 70251 — Safety device on heating and cooling coils. By Raab. Nov 29, 1938. In German. 1.50

5077-5176 PB L 70251 — Tables for computing heat exchangers. Mar-May 1942. In German. 10.00

5177-5185 PB L 70251 — Inductively-heated autoclaves. By Schoerg. Oct 21, 1937. In German. 1.50

5186-5198 PB L 70251 — Load and heat stresses in thick-walled vessels. By Matz. Aug. 23, 1938. In German. 1.50

5199 PB L 70251 — Fauling retorts for sulfuric acid concentration. By Trebitz. Nov 26, 1938. In German. 1.50

5200-5208 PB L 70251 — Ventilator-condensator with 2000 cbm hourly capacity. By Spangenmacher. Apr 9, 1940. In German. 1.50

5209-5212 PB L 70251 — Cooling ponds. Jul 4, Oct 9, 1944. In German. 1.50

5213-5224 PB L 70251 — Condensers for solvent recovery installations. Apr 10, 1943. In German. 1.50

5225-5235 PB L 70251 — Leuna-type large condensers. By Matz. Apr 12, 1937. In German. 1.50

5236-5238 PB L 70251 — Substitution of clay pipes for silicon pipes. By Lechle. Nov 1938. In German. 1.50

5239-5242 PB L 70251 — Heating of 3000 liter stirring boilers. By Einsler. Apr 5, 1939. In German. 1.50

5247-5260 PB L 70251 — Standards in computing heat exchangers. By Matz. Oct 21, 1941. In German. 3.00

5261-5266 PB L 70251 — Vacuum steam heating for a drying cabinet. By Hofaer and Beck. Apr 27, 1937. In German. 1.50

5267-5275 PB L 70251 — Use of mercury vapors in industrial processes. By Matz. Jul 19, 1938. In German. 1.50

5276-5278 PB L 70251 — I.G. refrigerator. By Penzig. 1941? In German. 1.50

5279-5306C PB L 70251 — Nozzles and collecting pipes. By Simon. Mar 1, 1938. In German. 1.50

5307 PB L 70251 — Blow-back safety valve for compressed air burners. By Speidel. Oct 25, 1937. In German. 1.50

5308-5317 PB L 70251 — Rollers for rotating pipes. Dec 12, 1940. In German. 1.50

5318-5321 PB L 70251 — Central oil heating for carberylation kettles. May 24, 1938. In German. 1.50

5322-5348 PB L 70251 — Acceptance tests with maximum-pressure steam-turbines. By Witte. Jun 8, 1938. In German. 3.00

PB L 70251-S. I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN-HOECHST, GERMANY. Reports in chemistry, chemical engineering, metallurgy and machinery. (FIAT Microfilm Reel A 28, Frames 4535-5348, abstract cards)

1936-1944. 63 p. Price: Microfilm-$2.00 - Photostat-$5.00
Brief abstracts of the individual items on the above reel. A 28, PB 70351, prepared by FIAT personnel in Germany.

*PB L 81544. LANGSTONE, A. E. and CLOUGH, F. German umbrella components industry. (BIOS Final Rept 1351, Item 22). May 1946. 62 p. Price: Microfilm-$2.50 - Photostat-$7.00
The German industry includes eight manufacturing firms, each mainly engaged on umbrella components, but also manufacturing other products, and a selling organization the Verband through which the sales of all umbrella components are effected except garden and folding frames. A general review of the whole industry is given, as well as a detailed report on each of ten manufacturers visited. Illustrations are included.

*PB L 81839. U. S. FIELD INFORMATION AGENCY, TECHNICAL. Drawing ink manufacture at the Günther-Wagner plant in Hannover. (Tech Bulletin T-45). May 1947. 3 p. Price: Mimeo-$0.25
This report contains formulas for black india ink and light lamp-blacks also method of manufacturing saponified shellac solution and fish glue (isinglas), as used by Günther-Wagner, Hannover, Germany. Method for producing colored inks are also included.

*PB L 77680. U. S. FIELD INFORMATION AGENCY TECHNICAL. The Theo. Goldschmidt de-tinning plant, Heilermann Strasse 15, Essen, Germany. (Tech Bulletin T-19). Apr 1947. 3 p. Price: Mimeo-$0.25
This report contains detailed information on two de-tinning processes used at the above plant and covers the chlorine process and the alkaline process (Non-electrolytic). Man power requirements and production figures are included.

PB L 79453. U. S. WAR DEPARTMENT. Miscellaneous gas protective equipment. (Tech Manual 3-290). War 1944. 90 p. Price: Microfilm-$2.00 - Photostat-$6.00
The purpose of this manual is to supplement FM-21-40 so far as it concerns certain protective equipment and supplies for use in chemical warfare. The manual deals with the following subjects: Protective clothing; field impregnation; kit for testing impregnite in clothing; miscellaneous protective equipment, gas detection devices; and gas alarm equipment. The text is limited to the description, use, maintenance, and destruction of miscellaneous gas protective equipment not included in TM 3-205, 3-220, 3-221, 3-222, 3-230, and 3-350. Photographs and drawings illustrate the manual.

PB L 79460. U. S. WAR DEPARTMENT. Use of chemical agents and munitions in training. (Tech Manual 3-305). Jun 1944. 59 p. Price: Microfilm-$2.00 - Photostat-$4.00
This manual is published for officers and non-commissioned officers charged with training troops in defense against chemical attack and in tactical use of chemical agents. It suggests model exercises involving all principal types of agents in both offensive and defensive situations. The manual supplements FM 3-5 and 21-40 as they pertain to training. Illustrated.

PB L 74984. VEREIN DEUTSCHER EISENHÜTTENLEUTE, DÜSSELDORF, GERMANY. Selected books from the library of the Association of German Metallurgists. (FIAT Microfilm Reel I 119, Frames not numbered) 1722-1912. 520 f. Price: Microfilm-$6.00 - Enlargement print-$52.00
This reel contains a 566-page book, printed in 1722, entitled "L'art de convertir le fer forge en acier et L'art d'adoucir le fer fondu," by de Reaumur (in French). Also included are two articles from "Beitrage zur Geschichte der Technik und Industrie--Jahrbuch des Vereins Deutscher Ingenieure," Vierter Band, 1912, entitled as follows: "R. Wolf, des Begrunder der Maschinenfabrik R. Wolf in Magdeburg-Buchau," by C. Matschoss, 1912; and "Das Materialprüfungswesen und die Erweiterung der Erkenntnisse auf dem Gebiet der Elastizität und Festigkeit in Deutschland wahrend der letzten vier Jahrzehnte," by R. Baumann, 1911. Also included is "Die Entwicklung und die Bestrebungen der Materialprüfung," by Alfons Leon, 1912. In German. The remainder of the reel is an article in Danish with German translation entitled in Danish "Om Materialprövningens udvikling i Norden og om statsprüveanstaltens virksomhed. (Über die Entwickelung des Materialprüfungswesens im Skandinavischen Norden so wie über die Tätigkeit der Statsprüfungsanstalt in Kopenhagen)." 1909.

PATENTS

CHEMICALS AND ALLIED PRODUCTS

PB L 16682. I. G. FARBENINDUSTRIE A. G. Patent applications of the Textile Auxiliary Aids Commission, 1936-1938. (FIAT Microfilm Reel C 54). Jan 1946. 724 f. Price: Microfilm-$6.00 - Enlargement print-$72.50
This reel continues the patent applications from the I. G. Farbenindustrie, Ludwigshafen, for the years 1937 and 1938, started in Reel C 53, PB 16681, abstracted in Vol. 5, p. 426 of this Bibliography. Two applications are dated March 1936. These applications are of interest to the T.M.K. or Textile Aids Commission of the I. G. They cover mainly, preparation of detergents, emulsifiers, wetting, dispersing, tanning, water-and fireproofing agents; they cover also cosmetic preparations, finishing agents for textiles, mercerization solutions and products for the preparation of fibers and textiles for dyeing. For other T.M.K. patent applications of a similar nature see Reel C 64, PB 17661, abstracted in vol. 5, pp. 333-346, of this Bibliography. In German.

PB L 65759. JOINT INTELLIGENCE OBJECTIVES AGENCY. Patent applications of the Textile Auxiliary Aids Commission, 1937-1938. (Enlargement Print Index of FIAT Microfilm Reel C 54, PB 16682). Jan 1946. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
This index lists the German titles of the reports contained in PB 16682 (see above) together with their PB numbers and frame numbers as they appear on the microfilm reel.

PB L 65760. I. G. FARBENINDUSTRIE A. G. Process for sizing paper. (T.M.K. Report). (Enlargement Print of Frames 851-854 of FIAT Microfilm Reel C 54, PB 16682). Sep 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the sizing of paper resin-glues or wax glues are added with small quantities of aluminum sulfate to the paper mass in the hollander. It was found that by the addition of water-soluble cellulose derivatives, i.e. cellulose ethers, to the paper mass the quantity of resin-, or wax-glues to be added could be reduced to one-third of the quantity needed when working without addition of water-soluble cellulose ethers. In German.

PB L 65761. I. G. FARBENINDUSTRIE A. G. Preparation of oxidation products of high molecular weight non-aromatic hydrocarbons. (T.M.K. Report). (Enlargement Print of Frames 855-858 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the oxidation of high molecular paraffins to carboxylic acids suitable for soap production metal catalysts are used. Zinc, cadmium, mercury, tin, lead, chromium, molybdenum, tungsten, uranium, iron, cobalt or nickel may be used alone or mixed, in the form of their salts or in their acid form. Permanganates and chromates are also suitable catalysts for this reaction. It is carried out at about 110 to 115° C. by pressing air through the heated paraffins. In German.

PB L 65762. I. G. FARBENINDUSTRIE A. G. Production of paper, board and pulp. Addition to application I. 5533 VII/55 i. (T.M.K. Report). (Enlargement Print of Frames

859-861 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The main application describes a process for the production of paper, board and pulp having a surface particularly adapted for printing. A bonding agent containing a filler and/or pigments are added to the paper-mass during its course over the sieve. As bonding agents, such water-soluble cellulose ethers in aqueous solution or water-insoluble cellulose ethers in alkali solution with addition of starch are recommended. The modification of this process concerned in this application I 59 2h1 consists in adding a solution of the water-soluble condensation products of alkylated alkalicellulose with monochloroacetic acid, with, or without, addition of starch, to the paper after leaving the machine. In German.

PB L 65763. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing products. (Addition to application I 55593 IVc/12p). (T.H.K. Report). (Enlargement Print of Frames 862-864 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The prior application relates to a process wherein alkyleneimines or their polymerization products are reacted with organic compounds containing reactive halogen, or with aliphatic or cyclic acids, or with their anhydrides or esters. The nitrogen containing reaction products are subsequently reacted with alkylene oxides, or are peralkylated. The modification of said process embodied in the application I 59391 consists in a treatment with alkylating agents in substantially smaller quantities than for per-alkylation. In German.

PB L 65764. I. G. FARBENINDUSTRIE A. G. Preparation of pure sulfite cellulose waste liquors. (T.H.K. Report). (Enlargement Print of Frames 865-868 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

It was found that sulfite cellulose waste liquors are purified by treating the crude liquor with colloidal aqueous solutions of oxides or hydroxides of polyvalent metals whereby the coloring constituents of the liquor are precipitated while the valuable components remain in solution. This solution may be concentrated and the remaining solids used for many purposes. In German.

PB L 65765. I. G. FARBENINDUSTRIE A. G. Preparation of elastic fibers. (T.H.K. Report). (Enlargement Print of Frames 869-871 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The elasticity of coconut fibers is improved by treatment with cold concentrated alkali hydroxide solutions under addition of detergents soluble in alkali. Subsequently the fibers are subjected to a mild bleaching process. In German.

PB L 65766. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing products. (T.H.K. Report). (Enlargement Print of Frames 872-873 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

Valuable nitrogen containing products are obtained by the reaction of alkyleneimines or their polymers with aliphatic isocyanic acid esters. Ethyleneimine, C-, or N-methyl-ethyleneimine, 1,2-dodecyleneimine or their polymers of any degree of polymerization are appropriate for this process. Also alkyleneimines containing alkyl radicals interrupted by hetero-atoms can be used, i.e. the reaction product of ethyleneimine with beta, beta'-dichlorodiethylether. Stearylisocyanate is appropriate for this reaction. In German.

PB L 65767. I. G. FARBENINDUSTRIE A. G. Rust removers. (T.H.K. Report). (Enlargement Print of Frames 876-877 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

Rust is readily removed from iron tools and materials by treatment with a solution of water-soluble amino acids containing for every basic nitrogen atom more than one organic radical with one carboxylic group and in addition water-soluble reducing agents suitable to convert the compounds of iron from their ferric into the ferrous stage. In German.

PB L 65768. I. G. FARBENINDUSTRIE A. G. Preparation of high-molecular weight ethers. (T.H.K. Report). (Enlargement Print of Frames 878-883 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

High molecular ethers can be readily obtained by heating alcohols with the hydro halide acid esters, or with the acid sulfuric-, or phosphoric acid esters of compounds containing hydroxyl groups. At least one of the starting materials should contain a higher molecular aliphatic radical. The heating should take place in the presence of strongly basic substances, i. e. caustic alkali-, or alkaline earth hydroxides, in order to help remove the water formed from the reaction mixture by distillation or by the addition of water-binding substances. In German.

PB L 65769. I. G. FARBENINDUSTRIE A. G. Preparation of reaction products from acid amides. (T.H.K. Report). (Enlargement Print of Frames 884-886 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

A process is described wherein acid anhydrides or chlorides of sulfuric acid are reacted with low-molecular acid amides. In German.

PB L 65770. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing condensation products. Addition to application I 56510 IVa/12q. (T.H.K. Report). (Enlargement Print of Frames 887-890 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

The prior application refers to a process wherein polymerization products of alkyleneimines containing at least one hydrogen atom attached to the nitrogen are reacted with esters of higher molecular alcohols and inorganic oxygen containing acids. The modification of this process embodied in this application I 59473 consists in the alkyleneimines instead of their polymerization products. In German.

PB L 65771. I. G. FARBENINDUSTRIE A. G. Production of yarns from organic thermo-plastic substances. (T.H.K. Report). (Enlargement Print of Frames 891-895 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

A method is described wherein fibers, threads, yarns or ribbons from organic thermoplastic substances are twisted by conveying over heated planes whereby they are stretched simultaneously. The diagram of an apparatus is included. In German.

PB L 65772. I. G. FARBENINDUSTRIE A. G. Preparation of wax- and vaseline-like products. (T.H.K. Report). (Enlargement Print of Frames 896-903 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00

Valuable wax- or vaseline-like products are obtained from residues of the distillation of fatty acids by heating these residues in the presence of catalysts which promote the splitting off of carbon dioxide and by subsequent reduction of the obtained products. In German.

PB L 65773. I. G. FARBENINDUSTRIE A. G. Refining of precipitated cellulose. (T.H.K. Report). (Enlargement Print of Frames 904-906 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The properties of yarns and fabrics from precipitated cellulose are improved by treatment with diluted formaldehyde solutions containing 2.5 to 5% formaldehyde in the presence of small quantities of aliphatic or aromatic sulfocarboxylic acids, i. e. sulfoacetic-; sulfopalmitic-, sulfophthalic-, sulfosalycilic acids etc., and by subsequent drying at 80 to 100° C. In German.

PB L 65774. I. G. FARBENINDUSTRIE A. G. Mixing of dyes and tanning mediums on fibers. (T.H.K. Report). (Enlargement Print of Frames 907-912 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Dyes and tanning mediums are fixed on the fiber by treating the fiber, before or after dyeing or tanning, with compounds containing nitrogen and capable of forming salt. These compounds are obtained by condensation of ammonia, primary and secondary amines, ureas and thioureas with aldehydes or ketones. In German.

PB L 65775. I. G. FARBENINDUSTRIE A. G. Preparation of wax-like materials. (T.H.K. Report). (Enlargement Print of Frames 913-919 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
Substances of wax-like properties are obtained by condensing aliphatic amines or polyamines containing at least one higher molecular alkyl radical and having at least one hydrogen atom attached to nitrogen with cyclic dicarboxylic acids. The two carboxylic groups of these acids should not be adjacent. Eleven examples give formulations for the condensation of terephthalic-, isophthalic-, adipic and diphenyl-4,4'-dicarboxylic acid with octadecylamine, dodecylamine, oleylamine and ethylene diamine. In German.

PB L 65776. I. G. FARBENINDUSTRIE A. G. Preparation of fatty acids and alkali salts from soaps. (T.H.K. Report). (Enlargement Print of Frames 920-924 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent concerns the recovery of alkali salts by hydrolysis from the crude soaps as these are produced from the oxidation products of higher-molecular aliphatic hydrocarbons. The aqueous solutions of the soaps are treated with concentrated mineral acids, such acids being used as represented in the anions of the previously used salts. The mineral acids may be used on gasous state. After separation of the fatty acids, the precipitated alkali salts may be separated from their saturated solution. In German.

PB L 65777. I. G. FARBENINDUSTRIE A. G. Preparation of high - molecular weight aldehydes, ketones and alcohols. (T.H.K. Report). (Enlargement Print of Frames 925-933 of FIAT Microfilm Reel C 54, PB 16682). Nov 1937. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent concerns the condensation of aldehydes and ketones in the presence of secondary amines or their salts in order to form higher molecular aldehydes and ketones. The difficulty of immediately removing the formed water is overcome by distilling the products either in a vacuum, or in the presence of a neutral gas, or by means of azeotropic distillation with such solvents as form azeotropic mixtures with water. Compounds adding water, as for instance anhydrous sodium acetate may also be used for this purpose. Mixtures of higher molecular unsaturated aliphatic aldehydes and ketones are obtained. The unsaturated aldehydes and ketones may be reduced to the corresponding unsaturated or saturated alcohols. In German.

PB L 65778. I. G. FARBENINDUSTRIE A. G. Adhesives. (T.H.K. Report). (Enlargement Print of Frames 934-941 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Solutions or pastes from water-soluble or gelatinous substances suitable for film formation in volatile organic solvents are appropriate as adhesives. The examples cited for such substances are: polyvinylmethylether, or the polyvinylether of ethyleneglycolmonomethylether, partially saponified polyvinylesters as obtained by heating of polyvinylformate or-acetate with mineral acids, etc. In German.

PB L 65779. I. G. FARBENINDUSTRIE A. G. Separation of unsaponifiable components from oxidation products of non-aromatic hydrocarbons. (T.H.K. Report) (Enlargement Print of Frames 942-945 of FIAT Microfilm Reel C 54, PB 16682) Dec 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the production of soaps from oxidation products of non-aromatic hydrocarbons, as obtained by the catalytic oxidation at temperatures below 130° C., the separation of the soaps from the non-oxidized part of the hydrocarbons involves difficulties. These difficulties are overcome by heating the saponified oxidation products in the presence of water to temperatures over 100° C. whereby the non-saponifiable parts separate readily in an upper layer which is withdrawn leaving the soap in the aqueous solutions from which the water is boiled off. In German.

PB L 65780. I. G. FARBENINDUSTRIE A. G. Process for preparation of fatty acids. (T.H.K. Report). (Enlargement Print of Frames 946-951 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the preparation of fatty acids from oxidation products of high molecular non-aromatic hydrocarbons high boiling residues are obtained in the distillation or extracting process. From these residues additional quantities of soap can be recovered by first hydrolizing these residues with alkali at an elevated temperature, if necessary in the presence of a catalyst. By this process polymerized aliphatic acids are depolymerized into lower boiling compounds so as to form considerable quantities of lower boiling aliphatic acids suitable for soap production. They are separated from the soap by precipitating with mineral acids. In German.

PB L 65781. I. G. FARBENINDUSTRIE A. G. Preparation of compounds soluble or capable of swelling in water. (T.H.K. Report). (Enlargement Print of Frames 952-955 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the same way as water-soluble cellulose ethers were prepared by a treatment of the alkali compounds of cellulose with monochloroacetic acid, water-soluble or gelatinous compounds are prepared from wood by pre-treating with alkali-hydroxide and subsequent treatment with monohalogen acetic acid or its salts. In German.

PB L 65782. I. G. FARBENINDUSTRIE A. G. Method for stripping acetate rayon dyeings. (T.H.K. Report). (Enlargement Print of Frames 956-959 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The dyed rayon is treated with aqueous baths containing reducing agents and aromatic compounds having phenolic hydroxyl groups. In German.

PB L 65783. I. G. FARBENINDUSTRIE A. G. Method for producing ketone ethers. (T.H.K. Report). (Enlargement Print of Frames 960-965 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
The formation of keto-ethers by adding alcohols to α,β-unsaturated ketones is described. Catalysts having an alkaline effect are present. In German.

PB L 65784. I. G. FARBENINDUSTRIE A. G. Method for producing salts of chloro-sulfonic acid. (T.H.K. Report). (Enlargement Print of Frames 966-967 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
The method uses salts of hydrohalogen acids with ammonia, or with primary or secondary amines. These are reacted with chlorosulfonic acid. In German.

PB L 65785. I. G. FARBENINDUSTRIE A. G. Separation of volatile substances from heavy or non-volatile ones by distillation. (T.H.K. Report). (Enlargement Print of Frames 970-978 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
The method is devised for separation of substances sensitive to prolonged heating. They are conducted through one or

several distillation chambers at low pressure and raised temperature. At the same time steam is introduced. The volatile factions are concentrated, entirely on partially by several superimposed chambers, optionally under cooling. Possible arrangements are shown in two drawings. In German.

PB L 65786. I. G. FARBENINDUSTRIE A. G. Production of valuable fatty acids. Expansion of ... application I 58 151 IVc/12o. (T.H.K. Report). (Enlargement Print of Frames 979-983 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The main application described vacuum distillation of mixtures of fatty acids obtained by oxidation of non-aromatic hydrocarbons of high molecular weight. The forerun was to be distilled off without steam. Here it is claimed to be preferable to add steam even for the forerun distillation. A drawing shows suitable apparatus. In German.

PB L 65787. I. G. FARBENINDUSTRIE A. G. Method of obtaining high molecular weight carboxylic acids from their salts. (T.H.K. Report). (Enlargement Print of Frames 988-990 of FIAT Microfilm Reel C 54, PB 16682). Dec 1937. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The salts are treated with carbon dioxide, preferably under pressure and in the presence of water. Carboxylic acids and bicarbonates are formed, and are separated. The bicarbonates are transformed into carbonates by heating. These carbonates are used to prepare salts of high molecular weight carboxylic acids. In both these processes carbon dioxide is freed, which may be used again for the main process described above. Oxidation products of high molecular weight paraffins are mentioned as suitable material for this process. In German.

PB L 65788. I. G. FARBENINDUSTRIE A. G. Production of polymers soluble in water. (T.H.K. Report). (Enlargement Print of Frames 991-994 of FIAT Microfilm Reel C-54, PB 16682). Dec 1937. 4 p. Price: Microfilm-$1.00-Photostat-$1.00
Co-polymerization of 60-90 parts of vinylmetnylketone and 40-10 parts of acrylic acid or α-substituted acrylic acids or water soluble salts of these acids is described. Subsequent neutralization may be necessary. In German.

PB L 65789. I. G. FARBENINDUSTRIE A. G. Production of condensates containing nitrogen. (T.H.K. Report). (Patent application I 60291). (Enlargement Print of Frames 995-997 of FIAT Microfilm Reel C 54, PB 16682). Oct 1937. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Ammonium salts are reacted, simultaneously, with formaldehyde and another aldehyde. The products are good fixing agents for tans and dyes. In German.

PB L 65790. I. G. FARBENINDUSTRIE A. G. Production of valuable condensates. Expansion of...application I 58019 IVa/12g. (T.H.K. Report) (Enlargement Print of Frames 998-999 of FIAT Microfilm Reel C 54, PB 16682) Jan 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
It is claimed that any other metal compounds having an alkaline effect may be substituted for those named in the main application. In German.

PB L 65791. I. G. FARBENINDUSTRIE A. G. Method for producing compounds containing nitrogen. Expansion of ... application I 59 390 IVc/12p. (T.H.K. Report). (Enlargement Print of Frames 1000-1001 of FIAT Microfilm Reel C 54, PB 16682). Jan 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
The main application described the reaction products of alkylene imines, or their polymers, with aliphatic esters of isocyanic acids. It is added in this patent that the esters of isothiocyanic acids may also be used. This product may be used to make textiles water repellent. In German.

PB L 65792. I. G. FARBENINDUSTRIE A. G. Production of valuable condensates. Expansion of ... application I 58019 IVa 12 g. (T.H.K. Report). (Enlargement Print of Frames 1002-1005 of FIAT Microfilm Reel C 54, PB 16682). Jan 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The main application and its first expansion 02 10497 (see PB 65790) described condensation reactions. It is added here that acyl groups may be introduced before or after the condensation. In German.

PB L 65793. I. G. FARBENINDUSTRIE A. G. Method of producing polyamide compounds. (T.H.K. Report). (Patent application I 60362). (Enlargement Print of Frames 1006-1020 of FIAT Microfilm Reel C 54, PB 16682). Jan 1938. 15 p. Price: Microfilm-$1.00 - Photostat-$1.00
Starting components are (1) amines having at least two reactive amino groups which are separated by at least two carbon atoms, and (2) unsaturated, particularly α-β unsaturated, monocarboxylic acids or their derivatives. Equimolecular amounts of these two components produce amino acids. This reaction is performed at temperatures favoring amide formation from different molecules of the amino acids. In German.

PB L 65794. I. G. FARBENINDUSTRIE A. G. Preparation of amino ketones. (T.H.K. Report). (Enlargement Print of Frames 1021-1024 of FIAT Microfilm Reel C 54, PB 16682). Jan 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
As starting material such unsaturated nitrogen containing compounds are used as are obtained in the presence of heavy metals of the 1st and second group by the action of acetylene on ammonia or on organic compounds containing NH or NH_2 groups. Also the quaternary ammonium compounds resulting from the above mentioned ones may be used. Treatment of these substances with water and acid leads to amino ketones having the amino group in α position to the keto group. In German.

PB L 65795. I. G. FARBENINDUSTRIE A. G. Preparation of poly-amino compounds. (T.H.K. Report). (Enlargement Print of Frames 1025-1034 of FIAT Microfilm Reel C 54, PB 16682). Jan 1938. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent refers to a previous one in which a process for higher molecular poly-amides is described. Any poly-amide produced in this way is reacted with a compound containing any group that will react with a N H - group as for instance most aldehydes and ketones, acid anhydrides or acidchlorides. The resulting poly-amide from ethylene diamine with acrylic acid, for instance is reacted with formaldehyde, with phosgen, or with maleic anhydride. In German.

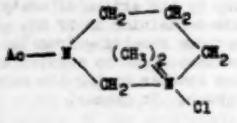
PB L 65796. I. G. FARBENINDUSTRIE A. G. Preparation of wax-like materials. (T.H.K. Report). (Enlargement Print of Frames 1035-1037A of FIAT Microfilm Reel C 54, PB 16682). Feb 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent refers to a previous one, (I. 59 678 IVd/12 o) in which aliphatic amines with at least one higher molecular alkylgroup and at least one hydrogen bound by a nitrogen atom are condensed with cyclic dicarboxylic acids which do not contain neighboring carboxylic groups. This patent describes the use of cyclic polycarboxylic acids with at least 3 carboxylic groups instead of the cyclic dicarboxylic acids. The restriction is made that the carboxylic groups do not form inner anhydrides. For instance trimesic acid is condensed with octodecylamine or the latter may be condensed with Pyridin-1,3,5,-tricarboxylic acid. The resulting products may be used for impregnation of textiles, paper, leather, wood or as bases for shoe and floor polishes. In German.

PB L 65797. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing condensation products. (T.H.K. Report). (Enlargement Print of Frames 1038-1047 of FIAT Microfilm Reel C 54, PB 16682). Feb 1938. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00
Compounds containing several aliphatic hydrocarbon groups

with several basic nitrogen groups having no acid amide or amidine like character and having at least one replaceable hydrogen bound to the nitrogen, are reacted with formaldehyde or compounds producing formaldehyde. In this way resins are produced which can be used for dressing artificial or natural fibers in any phase of their processing. They may also be used on leather or paper. Because of their basic properties they form compounds with acid dyes and tanning agents. As starting materials the following amino-compounds may be used for instance: Trimethylenediamine, Aminopiperidin also reactionproducts of alkylenepolyamines with chloroacetic acid or chloroacetamide. In German.

PB L 65798. I. G. FARBENINDUSTRIE A. G. Preparation of condensation products. (T.H.K. Report). (Enlargement Print of Frames 1040-1058 of FIAT Microfilm Reel C 54, PB 16682). Feb 1938. 12 p. Price: Microfilm-$1.00 - Photostat-$1.00

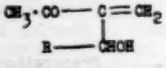
Three types of starting materials are used to form the final condensation products, serving as textile aides. Type 1 are organic or inorganic acid anydrides or halogenides or their substitution products. Type 2 are condensation products of formaldehyde with ammonia such as hexamethylenetetramine and trialkyltrimethylenetriamine. Type 3 of substances for this condensation are organic compounds containing bivalent sulfur such as diethylsulfide, thiophene, or trivalent nitrogen such as trimethyl amine, pyridine or trivalent phosphorus such as triethylphosphine. The final product may have a constitution of this general type:



where Ac means an organic or inorganic acid radical originating from the acidchloride used. 10 examples are given. In German.

PB L 65799. I. G. FARBENINDUSTRIE A. G. Preparation of N-substituted amino compounds. (T.H.K. Report). (Enlargement Print of Frames 1059-1065 of FIAT Microfilm C 54, PB 16682). Feb 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

This patent describes the formation of N-substituted amino compounds by reacting ammonia or its organic derivatives containing at least one basic NH_2 or NH-group with hydroxymethylbutenones of the general formula:



where R means either hydrogen, alkyl, cycloalkyl or aralkyl.

8 examples are given. On of them describes the formation of dimethylamino-2-hydroxy methylbutane-3-one from 2-hydroxymethyl-1-butene-3-one with dimethylamine. The final products are as well dyes as dye intermediates. In German.

PB L 65800. I. G. FARBENINDUSTRIE A. G. Preparation of amino ketones. (Patent application I 60 363 IVd/12o). (T.H.K. Report). (Enlargement Print of Frames 1066-1068 of FIAT Microfilm Reel C 54, PB 16682). Feb 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is an addition to the patent described in PB 65794. In German.

PB L 65801. I. G. FARBENINDUSTRIE A. G. Dyeing of mixed fibers and textiles. (T.H.K. Report). (Enlargement Print of Frames 1069-1073 of FIAT Microfilm Reel C 54, PB 16682). Feb 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

This application is an addition to German Patent 639 199. Salt forming dyes, especially certain suitable azo dyes, are used for dyeing and printing mixed textiles of artificial and plant fibers. Thus pre-dyed textiles are treated for fixation with cation active compounds containing ter- or pentavalent nitrogen pentavalent phosphorus or tetra valent sulfur. As an addition aliphatic aldehydes may be added to the fixative. After application of the fixative the textiles are treated again with the same or similar dye as before. 3 examples are given. The fastness of the dyes seems distinctly improved. In German.

PB L 65802. I. G. FARBENINDUSTRIE A.G. Preparation of sulfonation products. (T.H.K. Report). (Enlargement Print of Frames 1074-1079 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

Sulfonation products of aliphatic ketones are prepared by introducing sulfo groups linked to the carbon atom directly or by means of a sulfur atom into aliphatic ketones of high molecular weight. The substances obtained are valuable wetting and emulsifying agents. 4 examples. In German.

PB L 65803. I. G. FARBENINDUSTRIE A. G. Preparation of fatty acid esters of monochlorohydrin. (T.H.K. Report). (Enlargement Print of Frames 1080-1084 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Aliphatic monocarboxylic acids with a minimum of 4 C atoms are reacted with epichlorohydrin in the presence of Friedel-Crafts's catalysts. The resulting fatty acid esters are used as intermediates for numerous technical purposes. In German.

PB L 65804. I. G. FARBENINDUSTRIE A. G. Preparation of fatty acid esters. (Patent application I 60768 IVd/12o). (T.H.K. Report). (Enlargement Print of Frames 1085-1091 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

Mononocarboxylic esters of monochlorohydrin which were obtained by reacting epichlorohydrin with aliphatic carboxylic acids in the presence of Friedel-Crafts's catalysts are esterified by treatment with aliphatic monocarboxylic acids. The resulting diesters of monochlorohydrin are either reached with metal salts of aliphatic monocarboxylic acids, or the resulting diesters of glycerol are esterified with aliphatic monocarboxylic acids. These substances are used as synthetic fats for human and animal consumption. In German.

PB L 65805. I. G. FARBENINDUSTRIE A. G. Process for the halogenation of hydrocarbons. (T.H.K. Report). (Enlargement Print of Frames 1092-1095 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is an addition to patent application I 58987 IVd/12o The main patent describes a process for the halogenation of hydrocarbons. The products of catalytic hydrogenation of the oxides of carbon are halogenated in the presence of sulfur, selenium or tellurium dioxide. According to this additional patent application the process is greatly improved by irradiation with ultraviolet rays. The end products can be transformed into solvents and plasticizers. In German.

PB L 65806. I. G. FARBENINDUSTRIE A. G. Dyeing with basic dyes. (T.H.K. Report). (Enlargement Print of Frames 1096-1103 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

Before, during or after the dyeing with the basic dyes, the fiber materials or leathers are treated with aqueous solutions of cation-active compounds which contain a minimum of 6 C atoms, and tri- or quinquevalent nitrogen or quinquevalent phosphor or quadrivalent sulfur. In German.

PB L 65807. I. G. FARBENINDUSTRIE A.G. Preparation of soaps. (T.H.K. Report). (Enlargement Print of Frames 1104-1109 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

Liquid or low melting oxidation products of aliphatic hydrocarbons or their fatty acids resulting from oxidation are

mixed with oxidation products of aliphatic hydro-carbons with a high melting point. This mixture is used for soap production. 3 examples. In German.

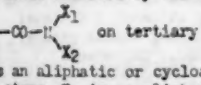
PB L 65808. I. G. FARBENINDUSTRIE A. G. Finishing and sizing agents. (T.H.K. Report). (Enlargement Print of Frames 1110-1113 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
It was found that substances prepared by condensation of urea or thiourea with formaldehyde and water-soluble polyvalent alcohols are suitable for usein textile finishing and sizing agents. In German.

PB L 65809. I. G. FARBENINDUSTRIE A. G. Preparation of synthetic tanning agents. (T.H.K. Report) (Enlargement Print of Frames 1114-1119 of FIAT Microfilm Reel C 54, PB 16682) Mar 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to a previous patent (application I 55462 IVa/12qu) describing a new process for preparing synthetic tanning agents. In modifying the original process, this additional patent application describes how water soluble products obtained by condensation of phenols with formaldehyde are condensed with sulfonic acids of aromatic hydrocarbons, and with phenols, naphthols and formaldehyde. 6 examples. In German.

PB L 65810. I. G. FARBENINDUSTRIE A. G. Finishing of textiles. (T.H.K. Report). (Enlargement Print of Frames 1120-1121 of FIAT Microfilm Reel C 54, PB 16682). Mar 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to a previous patent (application I 53615 IVd/8k). In the main patent a process for finishing textiles was described where the latter are treated with resin alcohols. According to this patent addition good finishing results are achieved, when monoesters of two basic carboxylic acids and of condensation products of abietinol and ethylene oxide are used as finishing agents. 1 example. In German.

PB L 65811. I. G. FARBENINDUSTRIE A. G. Preparation of dried mineral treated leather which is easily fullable. (T.H.K. Report). (Enlargement Print of Frames 1122-1125 of FIAT Microfilm Reel C 54, PB 16682). Apr 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The trimmed leather, which is deacidified prior to drying, is treated with polyglycol ethers containing a group of aliphatic or aliphatic-aromatic nature imparting oil solubility. In German.

PB L 65812. I. G. FARBENINDUSTRIE A. G. Water repellents for textiles. (T.H.K. Report). (Enlargement Print of Frames 1126-1131 of FIAT Microfilm Reel C 54, PB 16682). Apr 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
The textiles are treated (in an aqueous medium) with substances obtained by the action of compounds of the formula



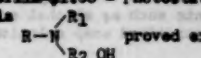
on tertiary nitrogen bases. In the formula R is an aliphatic or cycloaliphatic group with a minimum of 15 C atoms, X_1 is an aliphatic group containing a minimum of 2 C atoms and a labile halogen, and X_2 is halogen or any organic group. After this treatment the textiles are heated. 2 examples. In German.

PB L 65813. I. G. FARBENINDUSTRIE A. G. Process for making textiles water repellent. (T.H.K. Report). (Enlargement Print of Frames 1132-1136 of FIAT Microfilm Reel C 54, PB 16682). Apr 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The textiles are treated with solutions or emulsions of salts of dithiocarbamic acids derived from amino compounds of higher molecular weight. 5 examples. In German.

PB L 65814. I. G. FARBENINDUSTRIE A. G. Preparation of organic sulfonic acids. (T.H.K. Report). (Enlargement Print of Frames 1137-1139 of FIAT Microfilm Reel C 54, PB 16682). Apr 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to a previous patent (application I 50615 IVd/12o 23). According to that patent valuable sulfonic acids are prepared from amines by interacting aromatic amines which contain sulfonic acid groups and which are substituted with aliphatic or aliphatic aromatic hydrocarbon radicals, and saturated aliphatic carboxylic acids of higher molecular weight. This patent addition suggests performing the above process by starting from aliphatic aromatic amines or such sulfonic acids thereof in which the amino group is bound on the aliphatic group. 2 examples. In German.

PB L 65815. I. G. FARBENINDUSTRIE A. G. Process for preparing surface active substances. (T.H.K. Report). (Enlargement Print of Frames 1140-1145 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Products obtained by the action of halogen and sulfur (or tellurium or selenium) dioxide on saturated aliphatic hydrocarbons (having a minimum of 8 C atoms) are hydrolized by means of alkalis. Subsequently the alkaline solution is separated from the undissolved portion which is treated again with halogen and sulfur-tellurium- or selenium oxides. An example. In German.

PB L 65816. I. G. FARBENINDUSTRIE A. G. Treatment of textiles. (T.H.K. Report). (Enlargement Print of Frames 1146-1147 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Compounds of the general formula

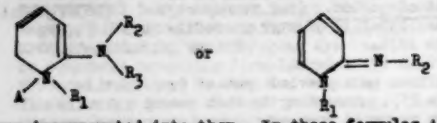


proved excellent agents for softening and oiling textiles and for the separation of fibers which are stuck together. In the above formula R is an aliphatic group with a minimum of 8 C atoms; R_2 is an aliphatic, cycloaliphatic, aliphatic aromatic, or aromatic group; and R_2 is an aliphatic group which may be interrupted by O atoms. Two examples. In German.

PB L 65817. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing condensation products. (T.H.K. Report). (Enlargement Print of Frames 1150-1155 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
One mol of a polyalkylene polyamine is reacted with at least 2 mols of two or more different carboxylic acids. At least one of the latter must be an aliphatic or cycloaliphatic carboxylic acid with no less than 12 C atoms, and at least one must be any carboxylic acid with 12 C atoms at most. The reaction products are used as plasticisers for textiles. Six examples are given. For instance: diethylenetriamine is condensed with technical stearic acid, the product formed is acetylated with acetic anhydride and is a good plasticiser. In German.

PB L 65818. I. G. FARBENINDUSTRIE A. G. Finishing of paper (Beard wood parchment etc.) surfaces. (T.H.K. Report). (Enlargement Print of Frames 1156-1161 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
The process described in this document pertains to the coating of the surface of paper, card-board, wood, parchment, vulcanized fiber and the like. The materials are coated with aqueous wax emulsions which leave a gloss upon drying. Three examples are given. In German.

PB L 65819. I. G. FARBENINDUSTRIE A. G. Process for making textiles water repellent. (T.H.K. Report). (Enlargement Print of Frames 1162-1165 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
For making textiles water repellent, compounds of the formula



are incorporated into them. In these formulas A is an anion; R_1 an aliphatic, cycloaliphatic or aliphatic-aromatic group; R_2 and R_3 are hydrogen or organic groups; and at least one of the groups marked R contains a minimum of 6 C atoms. After the initial treatment the materials are subjected to heat, without being deteriorated. Three examples are given. In German.

PB L 65820. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogen containing condensation products. (T.H.K. Report). (Enlargement Print of Frames 1166-1170 of FIAT Microfilm Reel C 54, PB 16682). May 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Esters of higher molecular weight fatty acids and higher molecular weight aliphatic alcohols, are reacted with amines. The resulting products are made water soluble by treatment with acids, alkylating agents or alkylene oxides of low molecular weight. In German.

PB L 65821. I. G. FARBENINDUSTRIE A. G. Extraction of organic solvents from soap solutions. (T.H.K. Report). (Enlargement Print of Frames 1171-1177 of FIAT Microfilm Reel C 54, PB 16682). Jun 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
To the soap solutions are added mineral acids at such a rate that only part of the fatty acids will be liberated. Then the solvents such as alcohol or gasoline are distilled off from the acidified soap solution. In German.

PB L 65822. I. G. FARBENINDUSTRIE A. G. Plasticizer. (T.H.K. Report). (Enlargement Print of Frames 1178-1179 of FIAT Microfilm Reel C 54, PB 16682). Jun 1938. 2p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to a previous patent (application I 46873 IVd/12 s). According to the main patent, condensation products of ethers of aliphatic polyvalent alcohols (of low molecular weight) and hydroxy amines on the one hand and of carboxylic acids (of higher molecular weight) on the other hand can be used as detergents and dying auxiliaries. According to this patent addition the above described substances are also well suited to be used as plasticizers. An example is given. In German.

PB L 65823. I. G. FARBENINDUSTRIE A. G. Preparation of substituted aromatic sulfonic acids. (T.H.K. Report). (Enlargement Print of Frames 1180-1182 of FIAT Microfilm Reel C 54, PB 16682). Jun 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to a previous patent (application I 37815 IVd/12o). According to the main patent aromatic or aliphatic-aromatic alcohols containing sulfonic acid groups in their aromatic nucleus are esterified with aliphatic carboxylic acids of higher molecular weight. Into the resulting esters sulfonic acid groups are introduced, whereby substituted aromatic sulfonic acids are formed. According to this patent addition similar results are obtained by using instead of alcohols hydroxyalkyl ethers substituted by sulfonic acid groups in the aromatic ring. As an example palmic acid chloride is reacted with glycolmonocresyl-ether. The formed palmic ester is sulfonated and represents a good detergent. The final products are valuable cleaning, wetting and dispersion agents. In German.

PB L 65824. I. G. FARBENINDUSTRIE A. G. Preparation of wetting agents. (T.H.K. Report). (Enlargement Print of Frames 1183-1186 of FIAT Microfilm Reel C 54, PB 16682). Jun 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Mixtures of fatty acids obtained as forerun in the paraffin oxidation process can be made into excellent wetting agents by the following method: The fatty acids are partly esterified with glycerol, leaving unchanged one of the hydroxyl groups of the glycerol. Then, the free hydroxyl group, is esterified with sulfuric acid. The salts of these mixed esters may be used as wetting agents or mixed with other wetting agents. A detailed example. In German.

PB L 65825. I. G. FARBENINDUSTRIE A. G. Preparation of sulfonic acids. (T.H.K. Report). (Enlargement Print of Frames 1187-1191 of FIAT Microfilm Reel C 54, PB 16682). June 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Carboxylic acid esters are prepared from sulfonic acids of aliphatic polyhydroxy compounds (having 3 to 4 C atoms) and carboxylic acids (having at most 4 C atoms). The ester group of these esters is reacted with carboxylic acids (having more than 4 C atoms) or their derivatives. By this method substances with high surface activity are obtained. Example: Allylacetate is reacted with acetic anhydride in presence of sulfuric acid monohydrate; the product is reacted with a mixture of aliphatic acids from the fore-run of the products of paraffin oxydation. The final product is converted into the soluble sodium salt, which may be used as wetting agent. In German.

PB L 65826. I. G. FARBENINDUSTRIE A. G. Preparation of wetting agents. (T.H.K. Report). (Enlargement Print of Frames 1192-1195 of FIAT Microfilm Reel C 54, PB 16682). Jun 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The starting substances for these wetting agents are sulfocarboxylic acids which are derived from the first runnings of the fatty acid mixture obtained with the oxidation of paraffin. These acids are esterified with the alcohols obtained from the same fatty acids by reduction. In German.

PB L 65827. I. G. FARBENINDUSTRIE A. G. Preparation of aqueous dispersions of high polymer organic materials. (T.H.K. Report). (Enlargement Print of Frames 1196-1201 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Solutions of the polymers in organic solvents insoluble in water are dispersed in the presence of traces of an emulsifying agent and an organic solvent soluble in water. As polymers poly iso-buxylene polyvinylether or benzylcellulose may be used for example. In German.

PB L 65828. I. G. FARBENINDUSTRIE A.G. Hard-sizing of paper. (T.H.K. Report). (Enlargement Print of Frames 1202-1205 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document describes a process for sizing paper by using, in addition to resin and wax sizes, such basic organic compounds (of high molecular weight) which will form difficultly soluble compounds with the saponified resins and/or waxes. In German.

PB L 65829. I. G. FARBENINDUSTRIE A. G. Disinfecting and preserving agents. (T.H.K. Report). (Enlargement Print of Frames 1206-1208 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent application pertains to disinfectants and preservatives which consist of products obtained by condensation of primary or secondary amines (containing at least 8 C atoms) on the one hand and of aldelydes (containing acidic groups) or aldelyde derivatives on the other hand. In German.

PB L 65830. I. G. FARBENINDUSTRIE A. G. Stable methylol compounds. (T.H.K. Report). (Patent application I 61895 IVd/12 (Enlargement Print of Frames 1209-1211 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
It is claimed that aqueous solutions or suspensions of methylol compounds of urea or thio urea may be stabilized by the addition of thickening agents soluble in water. In German.

PB L 65831. I. G. FARBENINDUSTRIE A. G. Preparation of butane polycarboxylic acids. (T.H.K. Report). (Patent application I 61893 IVd/12 o). (Enlargement Print of

Frames 1212-1215 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

1,3 butadiene, or other compounds of the butadiene series, are added to unsaturated compounds having a carbon double bond activated by at least one group in α-position to it, containing several bonds. By this addition cyclohexene derivatives are formed. They are oxidized with nitric acid to the butane polycarboxylic acids. In German.

PB L 65832. I. G. FARBENINDUSTRIE A. G. Preparation of nitrogenous condensation products. (T.H.K. Report). (Patent Application I 61930 IV c/12 p). (Enlargement Print of Frames 1216-1225 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00

The components used in the condensation are (1) the products of dehalogenation of aliphatic carboxylic acids of high molecular weight, or their derivatives capable of forming amides; or acids derived from high molecular aliphatic acids occurring in natural waxes (2) polyamines having at least two nitrogen atoms with at least one hydrogen atom each. These substances may be used for production of leather substitutes, floor coverings, plastic materials, electric insulation materials, etc. In German.

PB L 65833. I. G. FARBENINDUSTRIE A. G. Hard-sizing paper. Expansion of ... application I 61865 IVa/55c). (T.H.K. Report). (Enlargement Print of Frames 1226-1228 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The main application described the use of basic organic compounds of high molecular weight together with the rosin sizes, etc., with which they form difficultly soluble compounds. It is added here that this method is particularly useful for the production of papers and paste-boards smooth on one side. In German.

PB L 65834. I. G. FARBENINDUSTRIE A. G. Preparation of hard-sized colored papers and pasteboards. (T.H.K. Report). (Patent application I 61972 IVc/55c). (Enlargement Print of Frames 1229-1233 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 5 p. Price: Microfilm-$1.00-Photostat-$1.00

At any stage of production of the paper, basic organic compounds of high molecular weight, able to form difficultly soluble compounds with the acid dyes used, are added. In German.

PB L 65835. I. G. FARBENINDUSTRIE A. G. Preparation of condensation products soluble or easily dispersible in water. Expansion of ... application I 49534 IV d/12 o. (Enlargement Print of Frames 1234-1239 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

The products are obtained by the reaction of two components as described below, and subsequent sulfonation: (1) Monomeric aliphatic or cyclic compounds, having in the molecule one or more hydroxy, carboxyl or amino groups, but at least six carbon atoms; as far as they have amino groups, their carbon chains must not be interrupted by heteroatoms. (2) Alkylene oxides having three or more carbon atoms, or compounds of similar effect. The products are protective colloids for different purposes as well as detergents and emulsifiers. In German.

PB L 65836. I. G. FARBENINDUSTRIE A. G. Preparation of high-molecular weight oxygen compounds. (T.H.K. Report). (Patent application I 62053). (Enlargement Print of Frames 1240-1245 of FIAT Microfilm Reel C 54, PB 16682). Jul 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

Aliphatic, cycloaliphatic, aliphatic-cycloaliphatic or aliphatic-aromatic compounds containing carboxyl groups and having at least 7 carbon atoms in the molecule are treated with metallic alkalis or alkali alcoholates. The resulting alkali compounds may be dissociated with water or aqueous acids. In German.

PB L 65837. I. G. FARBENINDUSTRIE A. G. Preparation of organic halogen-sulfonic-acid halides. (T.H.K. Report) (Patent application I 62028) (Enlargement Print of Frames 1246-1251 of FIAT Microfilm Reel C 54, PB 16682) Jul 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

Halogen hydrocarbons having at least one carbon atom carrying one or more hydrogen atoms and no halogen atom, are reacted with sulfur dioxide and halogen under ultraviolet irradiation. Four examples. In German.

PB L 65838. I. G. FARBENINDUSTRIE A. G. Preparation of carboxylic acid esters. Expansion of...application I 58478 IVd/12a. (T.H.K. Report) (Enlargement Print of Frames 1252-1258 of FIAT Microfilm Reel C 54, PB 16682) Jul 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

Carboxylic acids are esterified with mixtures of polyvalent aliphatic alcohols having at least three hydroxyl groups. Such alcohols are obtained by the condensation of three or more molecules of acetaldehyde and reduction of the condensate. Eight examples. In German.

PB L 65839. I. G. FARBENINDUSTRIE A. G. Halogenating hydrocarbons. Expansion of...application I 60838 IVd/12a. (T.H.K. Report) (O.Z. 10935) (Enlargement Print of Frames 1259-1265 of FIAT Microfilm Reel C 54, PB 16682) Jul 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

The previous application described halogenation of certain hydrocarbons by treating them with halogen and sulfur dioxide, selenium dioxide, or tellurium dioxide, under ultraviolet irradiation. It is added here that this method is suitable for any and all hydrocarbons. Three examples. In German.

PB L 65840. I. G. FARBENINDUSTRIE A. G. Upholstering material. (T.H.K. Report) (Enlargement Print of Frames 1266-1268 of FIAT Microfilm Reel C 54, PB 16682) Jul 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

Shavings of polymers of vinyl chloride were found suitable for upholstering purposes. One example. In German.

PB L 65841. I. G. FARBENINDUSTRIE A. G. Preparation of quaternary ammonium compounds. (T.H.K. Report) (O. Z. 10951) (Enlargement Print of Frames 1269-1276 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00

Tertiary amines are reacted with esters of the general formula $R-X-R'-CH_2-Y$; or amines of the formula

$$R-X-R'-CH_2-N\begin{matrix}R''\\R'''\end{matrix}$$

are alkylated, cycloalkylated, aralkylated or arylated. X represents a hetero atom or group containing one; Y the acid radical of a mineral acid, optionally organically substituted; R' an aliphatic or cycloaliphatic group of high molecular weight; R'' and R''' hydrogen or an aliphatic, cycloaliphatic, aromatic or heterocyclic group, optionally bound together. Four examples. In German.

PB L 65842. I. G. FARBENINDUSTRIE A. G. Production of surface active condensates. (T.H.K. Report) (O. Z. 10952) (Enlargement Print of Frames 1277-1281 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Groups imparting solubility in water are introduced into the condensation products of metallic alkalis or alkali metal alcoholates with aliphatic, cycloaliphatic, aliphatic-cycloaliphatic, or aliphatic-aromatic ketones or aldehydes, or into the compounds obtained by their dissociation with water or acids, having hydroxyl groups. Five examples. In German.

PB L 65843. I. G. FARBENINDUSTRIE A. G. Production of nitrogenous condensates. (T.H.K. Report) (O.Z. 10954) (Enlargement Print of Frames 1282-1290 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
Partially amidized polycarboxylic acids, or their amidizable derivatives not containing aliphatic or cycloaliphatic groups of high molecular weight, are amidized with primary or secondary amines having aliphatic or cycloaliphatic groups with at least 12 carbon atoms. Nine examples. In German.

PB L 65844. I. G. FARBENINDUSTRIE A. G. Colored soaps. (T.H.K. Report) (Enlargement Print of Frames 1291-1294 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document concerns the production of colored soaps by means of finely dispersed alkali resistant organic dyes, insoluble in water. A dispersing agent is used for this purpose. Four examples. In German.

PB L 65845. I. G. FARBENINDUSTRIE A. G. Preparation of vinyl esters. (T.H.K. Report) (Patent application I 62204 IVd/12o) (Enlargement Print of Frames 1295-1298 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
In an addition to patent 588 352, production of vinyl esters is described by reacting acetylene on tall oil in the liquid phase in the presence of zinc and cadmium salts of organic acids. Two examples. In German.

PB L 65846. I. G. FARBENINDUSTRIE A. G. Preparation of cosmetics containing water softeners. (T.H.K. Report) (Enlargement Print of Frames 1299-1301 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Preparation of cosmetics is described containing water softeners in the form of alkaline salts of amino-carboxylic acids, containing more than one carboxylic group per nitrogen atom. So much boric acid is added that the pH value of their diluted solution is kept between 8.5 and 9.5, better between 9.0 and 9.2. If the corresponding free amino carboxylic acids or their acid reacting salts are used, the acidity should be adjusted by addition of alkaline salts of boric acid so as to give the above pH value. Two examples. In German.

PB L 65847. I. G. FARBENINDUSTRIE A. G. Preparation of cosmetics containing water softener. (T.H.K. Report) (Enlargement Print of Frames 1302-1303 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is an addition to patent O. Z. 10973 in which the preparation of cosmetics containing water softeners is described. Amino carboxylic acids are added containing more than one carboxylic group per nitrogen atom, or their acid reacting salts. The adjustment of the required pH value is achieved by means of alkylamines. One example. In German.

PB L 65848. I. G. FARBENINDUSTRIE A. G. Preparation of alkylated sulfonic acids. (T.H.K. Report) (Enlargement Print of Frames 1304-1307 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Polynuclear aromatic hydrocarbons or their derivatives or their sulfonation products are condensed with n-butanol, with isohexylalcohol, isoheptylalcohol or their mixture. The obtained products are sulfonated and neutralized if necessary. A description of this process and one example are given. In German.

PB L 65849. I. G. FARBENINDUSTRIE A. G. Synthetic fatty acid preparations. (T.H.K. Report) (Enlargement Print of Frames 1308-1317 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document concerns the production of detergents, containing soaps of synthetic fatty acids on one hand; on the other hand they contain pyrophosphates, secondary orthophosphates, metaphosphates, hexametaphosphates, sesquicarbonates of alkali metals or of ammonia or borax. Three examples are given; also a summary table of the analysis and foam producing properties of the product. In German.

PB L 65850. I. G. FARBENINDUSTRIE A. G. Preparation of tanning mediums. (T.H.K. Report) (Enlargement Print of Frames 1318-1323 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent describes the production of tanning agents from water soluble products obtained by sulfonation from dihydroxydiarylsulfones. These products are condensed with an aldehyde. Five examples are given. Leather tanned in this way is said to remain white even after exposure to sunlight. In German.

PB L 65851. I. G. FARBENINDUSTRIE A. G. Preparation of hydroxy ethers from polyhydroxy alcohols. (T.H.K. Report) (Enlargement Print of Frames 1324-1328 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Carboxylic acids obtained from oxidation of paraffin hydrocarbons with at least 5 carbon atoms in the molecule are esterified with polyvalent aliphatic alcohols. Glycol ether-, polyglycol ether- or polyglycerol groups are introduced into the obtained ethers. The products are plasticisers and textile aids. Three examples are given. In German.

PB L 65852. I. G. FARBENINDUSTRIE A. G. Preparation of high-boiling carboxylic acids from oxidation products of high molecular weight paraffin hydrocarbons. (T.H.K. Report) (Enlargement Print of Frames 1329-1332 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The German title gives erroneously "high melting" carboxylic acids while the patent describes high boiling, low melting carboxylic acids. The fraction of high boiling carboxylic acids obtained from oxidation products of high molecular paraffin hydrocarbons are recrystallized from organic solvents miscible or if necessary mixed with water. An example and a table of physical and chemical properties are given. In German.

PB L 65853. I. G. FARBENINDUSTRIE A. G. Preparation of artificial resins. (T.H.K. Report) (Enlargement Print of Frames 1333-1336 of FIAT Microfilm Reel C 54, PB 16682) Aug 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent describes the production of synthetic resins capable of being hardened, by condensation of glyoxaldiureine, glyoxaldithioureine, or a mixture of both with formaldehyde or substances producing formaldehyde. Three examples are given. These substances may be used as adhesives or textile aids as well as molding resins. In German.

PB L 65854. I. G. FARBENINDUSTRIE A. G. Fireproofing combustible materials. (T.H.K. Report) (Enlargement Print of Frames 1337-1340 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent describes a process of fireproofing flammable materials by treatment with compounds insoluble in water possessing film producing qualities. It proved adequate to treat the material for fireproofing first with the soluble ammonium salt or amide of inorganic acids or with alumina and to add the insoluble substances later with the film producing materials. Two examples are given. In German.

PB L 65855. I. G. FARBENINDUSTRIE A. G. Preparation of polyamide compounds. (T.H.K. Report) (Enlargement

Print of Frames 1341-1345 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent concerns a modification of patent I 60 362 IVd/12o, in which compounds of the following type were obtained from monocarboxylic acids with primary monoaryl amines:

$$R\cdot NH\cdot CH_2\cdot CH_2\cdot COOR \rightarrow R\cdot NH\cdot CH_2\cdot CH_2CO(\underset{\underset{R}{|}}{N}\cdot CH_2CH_2CO)_{x-2}\cdot N\cdot CH_2CH_2COOH + (x-1)H_2O.$$

In this patent monoarylamido carboxylic acids are heated to form polyamide-like compounds serving as textile aids. In German.

PB L 65856. I. G. FARBENINDUSTRIE A. G. Preparation of organic sulfur oxygen and nitrogen containing compounds. (T.H.K. Report) (Enlargement Print of Frames 1346-1353 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
According to this patent organic compounds containing oxygen, sulfur and nitrogen are obtained easily. The products obtained in the liquid phase by reacting halogen and sulfur dioxide with saturated aliphatic hydrocarbons are treated with ammonia or organic derivatives of ammonia containing one or several primary or secondary basic amino groups. The products are plasticizers. An example is given. In German.

PB L 65857. I. G. FARBENINDUSTRIE A. G. Preparation of tanning agents. (T.H.K. Report) (Enlargement Print of Frames 1354-1358 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent is an addition to patent application I 62319 IVc/12q in which the production of condensation products of soluble sulfonated dihydroxydiarylsulfones with aldehydes is described. The product is a tanning agent yielding white leather. The condensation of the above sulfones with aldehydes and urea is given. Two examples are added. In German.

PB L 65858. I. G. FARBENINDUSTRIE A. G. Preparation of tanning agents. (T.H.K. Report) (Enlargement Print of Frames 1359-1363 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
This patent is an addition to patent application I 62319 IVc/12q in which the production of condensation products of soluble dihydroxydiarylsulfones with aldehydes is described. In this addition unsulfonated dihydroxydiarylsulfones are condensated with urea and formaldehyde. The obtained condensation products, insoluble or almost insoluble in water, are dispersed in aqueous solutions of aromatic sulfonic acids. Two examples are added. In German.

PB L 65859. I. G. FARBENINDUSTRIE A. G. Preparation of high-molecular weight condensation products. (T.H.K. Report) (Enlargement Print of Frames 1364-1367 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Urea or its derivatives are heated to react with diamines forming straight chained condensation products. This process yields resins which can be used for spinning or molding purposes. Three examples are given. In German.

PB L 65860 and PB L 65861. I. G. FARBENINDUSTRIE A. G. Preparation of wax-like substances. (T. H. K. Report) (Enlargement Print of Frames 1368-1373; 1374-1378, respectively, of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 6 p., 5 p., respectively. Price for each: Microfilm-$1.00 - Photostat-$1.00
The method consists in hydrogenation of the products obtained by the methods described in applications I 45047 and 45776, IVd/12o, respectively. The descriptions for producing these starting materials are not repeated here. These substances can be used for many purposes due to their chemical stability. They make excellent textile aids, paper coatings and lubricant thickeners. Six examples are given in the first, three in the second patent. In German.

PB L 65862. I. G. FARBENINDUSTRIE A. G. Preparation of wax-like substances of high molecular weight. (T.H.K. Report) (Enlargement Print of Frames 1379-1382 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Starting materials are the products obtained by oxidising the residues of the distillation of fatty acids. They contain free or esterified carboxyl groups. These products are treated with catalysts splitting off carbon dioxide. This is followed by hydrogenation. These products can be used as casting resins. An example is given. In German.

PB L 65863. I. G. FARBENINDUSTRIE A. G. Preparation of high molecular wax-like substances. (T.H.K. Report) (Patent application I 49537 IVd/12o) (Enlargement Print of Frames 1383-1386 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The method consists in hydrogenation of the products obtained according to application I 49537 IVd/12o. The description given in that application is not repeated here. Four examples are given. These products are textile aids and serve as paraffin hardeners. In German.

PB L 65864. I. G. FARBENINDUSTRIE A. G. Preparation of vaseline-like materials. (T.H.K. Report) (Enlargement Print of Frames 1387-1388 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
Tall oil, crude or purified, is heated in the presence of catalysts splitting off carbon dioxide. The resulting substances are hydrogenated. The end products are vaseline-like. This method follows British patent 410087. The end products according to the British patent are wax-like. An example is given. In German.

PB L 65865. I. G. FARBENINDUSTRIE A. G. Textile printing pastes. (T.H.K. Report) (Enlargement Print of Frames 1389-1391 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The pastes described consist of pigment dyes, acetyl cellulose and lactones of fatty acids of low molecular weight. Such pastes are nonpoisonous, and miscible with alcohol and water. Four examples are given. In German.

PB L 65866. I. G. FARBENINDUSTRIE A. G. Thickening agents. (T.H.K. Report) (Enlargement Print of Frames 1392-1395 of FIAT Microfilm Reel C 54, PB 16682) Sep 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Application I 59976 IVc/12o describes products obtained by the reaction of monohalo acetic acids with wood previously treated with alkali hydroxides. It is claimed that such products are suitable thickening agents for textile printing. Five examples are given. In German.

PB L 65867. I. G. FARBENINDUSTRIE A. G. Improving materials to be dried. (T.H.K. Report) (Enlargement Print of Frames 1396-1397 of FIAT Microfilm Reel C 54, PB 16682) Oct 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
Small amounts of volatile ammonium salts are added to the materials to be dried. In German.

PB L 65868. I. G. FARBENINDUSTRIE A. G. Aids for the textile, leather, and paper industries. Expansion of... application I 47412 IVd/12o. (T.H.K. Report) (Enlargement Print of Frames 1398-1401 of FIAT Microfilm Reel C 54, PB 16682) Oct 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

Ether-like substances, suitable as aids of this kind, are obtained by the reaction of (1) mono-, di-, or tri-ethylene glycols, or compounds releasing them, with (2) esters or amides, containing free hydroxyl groups, obtained from fatty acids or hydroxy alkyl amines of high molecular weight. Three examples are given. In German.

PB L 65869. I. G. FARBENINDUSTRIE A. G. Finishing of textiles. (T.H.K. Report) (Enlargement Print of Frames 1402-1406 of FIAT Microfilm Reel C 54, PB 16682) Oct 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

The textiles are pretreated with an aqueous dispersion of an organic higher polymer giving a soft film with a tendency to sticking. After drying the textiles are treated with an aqueous dispersion of an organic higher polymer giving a hard film that shows no longer tendency to sticking. Two examples. In German.

PB L 65870. I. G. FARBENINDUSTRIE A. G. Process for preparing fatty acids or fats from natural products of mineral origin. (Patent application S 121969 IVd/12o) (T.H.K. Report) (Enlargement Print of Frames 1407-1411 of FIAT Microfilm Reel C 54, PB 16682) Mar 1936. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Paraffin oil, vaseline, or any other hydrocarbons (with 16-18 C atoms) derived from natural products of mineral origin (lignite, petroleum) are chlorinated. The chlorine compounds are converted into nitriles by known methods and these subsequently hydrolyzed. A detailed description of the process is given. In German.

PB L 65871. I. G. FARBENINDUSTRIE A. G. Preparation of fatty acids or fats from natural products of mineral origin. (Patent application S 122033 IVd/12o) (T.H.K. Report) (Enlargement Print of Frames 1412-1414 of FIAT Microfilm Reel C 54, PB 16682) Mar 1936. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is an addition to patent application S 121969 IVd/12o (PB 65870), describing the preparation of fatty acids from such substances as lignite, petroleum and derivatives. According to this additional patent application, the chlorine compounds obtained from the starting substances are oxidized to fatty acids either directly or after previous hydrolysation to alcohols or aldehydes. In German.

PB L 65872. I. G. FARBENINDUSTRIE A. G. Fireproofing of inflammable materials. (T.H.K. Report) (Enlargement Print of Frames 1415-1418 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

The materials to be fireproofed are given a coating of nitrogenous products condensed from ammonium salts, formaldehyde and other aldehydes. Phosphoric salts may be added to these substances. Two examples are given. In German.

PB L 65873. I. G. FARBENINDUSTRIE A. G. Preparation of emulsions from wax-like materials. (T.H.K. Report) (Enlargement Print of Frames 1419-1423 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

Esters of fatty acids (of high molecular weight) and of glycols (of low molecular weight) are emulsified with water, using alkali salts of acids of "montan" wax, and soaps of fatty acids (having 12-18 C atoms in the molecule). The products are used as polishing waxes. An example is given. In German.

PB L 65874. I. G. FARBENINDUSTRIE A. G. Preperation of condensation products. (T.H.K. Report) (Enlargement Print of Frames 1424-1430 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is an addition to patent application I 60362 IVd/12o, describing a process for the preparation of polyamide-like condensation products. According to this additional patent the products obtained by the above process are coupled advantageously with diamines and dicarboxylic acids or allied compounds as given in the document. The products thus prepared are suitable for the production of threads, films, bands, coatings, etc. In German.

PB L 65875. I. G. FARBENINDUSTRIE A. G. Preparation of surface active agents. (T.H.K. Report) (Enlargement Print of Frames 1431-1437 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

Halogen and sulfur dioxide are allowed to act upon aliphatic hydrocarbons with no less than 8 C atoms. The resulting compounds are reacted with aliphatic sulfonic or carboxylic acids containing amino or imino groups. The final products are valuable detergents and wetting agents. Two examples are given. In German.

PB L 65876. I. G. FARBENINDUSTRIE A. G. Process for preparing organic compounds containing oxygen and sulfur. (T.H.K. Report) (Enlargement Print of Frames 1438-1442 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

This is an addition to a previous patent (application I 61601 IVd/12o), describing a process for synthetizing organic compounds. According to the main patent, the liquid products of the action of halogen and sulfur dioxide on aliphatic hydrocarbons are reacted with alcohols or phenols in an alkaline medium. According to this additional patent application the process is expanded: The products prepared by the above method are further treated with aqueous solutions of alkaline earth metal halides or earth metal halides. The end products are used as plasticizers. Two examples are given. In German.

PB L 65877. I. G. FARBENINDUSTRIE A. G. Printing pastes. (T.H.K. Report) (Enlargement Print of Frames 1443-1444 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

Excellent prints on fabrics of all kinds are obtained by using superpolyamides as bonding agents in the preparation of the printing paste. Four examples describe textile printing pastes the bonding substance of which is the condensation product of hexamethylenediamine with adipic acid. In German.

PB L 65878. I. G. FARBENINDUSTRIE A. G. Hydrolysis of vegetable and animal fats and oils. (T.H.K. Report) (Enlargement Print of Frames 1445-1447 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The hydrolysis of vegetable and animal oils, i. e., soybean oil, is greatly facilitated by the addition of alkylated naphthalene sulfonic acids containing two or more alkyl radicals of which at least one has 5 to 18 C atoms. These alkyl radicals should either be attached to naphthalene ring over a secondary C atom or they should have a side chain. Diisohexyl- or diisoheptylnaphthalene sulfonic acids are presented as examples. By this method pure glycerol can be produced easily because of the solubility conditions of the formed naphthalene sulfonic salts. In German.

PB L 65879. I. G. FARBENINDUSTRIE A. G. Preparation of washing, wetting, dispersing and softening agents. (T.H.K. Report) (Enlargement Print of Frames 1448-1451 of FIAT Microfilm Reel C 54, PB 16682) Nov 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

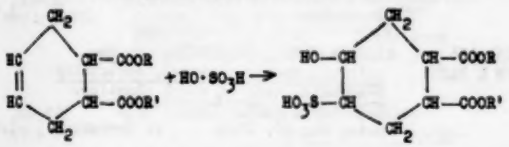
Amides of higher molecular carboxylic acids containing at least one hydrogen atom attached to the nitrogen atom (i. e. oleic acid amide) are heated with aqueous solutions of bisulfite compounds of aldehydes or ketones (i. e. formaldehyde). From the resulting dispersion the water is distilled off. The remaining solid mass is ground. The resulting powder is water soluble and provides an efficient washing, wetting and dispersing agent. Two examples are given. In German.

PB L 65880. I. G. FARBENINDUSTRIE A. G. Process for improving celluloses. (T.H.K. Report) (Enlargement Print of Frames 1452-1453 of FIAT Microfilm Reel C 54, PB 16682) Dec 1938. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
Threads, fabrics or films from cellulose are impregnated with solutions of super-polyamides obtained by condensation of aliphatic diamines with aliphatic dicarboxylic acids, or by condensation of omega-amino-carboxylic acids, or by polymerisation of their lactams. The impregnated fabrics become wool-like and can be dyed readily by acid or basic dyes. In German.

PB L 65881. I. G. FARBENINDUSTRIE A. G. Preparation of polyamides. (T.H.K. Report) (Enlargement Print of Frames 1454-1457 of FIAT Microfilm Reel C 54, PB 16682) Dec 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the condensation of aliphatic diamines, i. e. penta- or hexamethylenediamine, with aliphatic dicarboxylic acids, i.e. adipic-, azelaic-, or sebacic acid, or of epsilon-aminocaproic acid, the resulting polyamides possess better properties if the condensation is carried out in the presence of polyvalent alcohols, i. e. glycols. The product may be used as threads, films, strings, molding plastics and as intermediate layer for safety-glass. Two examples are given. In German.

PB L 65882. I. G. FARBENINDUSTRIE A. G. Surgical threads, liniments, tubes, vessels, medical apparatus and parts. (T.H.K. Report) (Enlargement Print of Frames 1458-1461 of FIAT Microfilm Reel C 54, PB 16682) Dec 1938. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Condensation products of aliphatic diamines, i. e. penta- or hexamethylenediamine, with aliphatic dicarboxylic acids, i. e. adipic-, azelaic-, or sebacic acid, or of epsilon-aminocaproic acid, are employed for the production of surgical threads, liniments, tubes, etc. In German.

PB L 65883. I. G. FARBENINDUSTRIE A. G. Preparation of surface active agents. (T.H.K. Report) (Enlargement Print of Frames 1462-1464 of FIAT Microfilm Reel C 54, PB 16682) Dec 1938. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Esters of the cyclohexene dicarboxylic acid readily obtained by the addition of butadiene to maleic acid are treated with sulfuric acid mono hydrate or with fuming sulfuric acid and acetic anhydride whereby sulfonic acids are obtained:



where R represents an alkyl-, arakyl-, or cycloalkyl radical, and R' is hydrogen or also an alkyl-, arakyl-, or cycloalkyl radical. Especially the esters of octyl-, dodecyl-, oleyl-, and octodecyl alcohols are suitable for this purpose. The resulting sodium salts of the sulfonic acids are recommended as detergents, emulsifiers and washing agents. In German.

MISCELLANEOUS

PB L 74274. I.G. FARBENINDUSTRIE A.G., BOBINGEN, GERMANY. Design patent applications for cameras and accessories, sound recording, etc.; miscellaneous applications. (FIAT Microfilm Reel E-3, Frames 1-1000) 1937-1941. 1000 f. Price: Microfilm-$6.00 - Enlargement print-$100.00
This reel contains 234 German design patent applications issued to Kodak A.G., Zeiss Ikon A.G. and many others, covering cameras and accessories, photographic films, sound recording, electronic instruments, plastics, etc. A number of miscellaneous applications are included. The individual applications are listed below and will be available separately as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please include PB, design patent number and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-2 PB L 74274	Holder for standard motion picture films. (Incomplete). Registered design 1504 437/57a, n.d. In German.	$1.50
3-5 PB L 74274	MÖBIUS, HERBERT (Inventor). Camera flash bulb attachment. Registered design 1504 437/57c dated Nov 16, 1940. In German.	1.50
6-10 PB L 74274	KODAK AKT. GES., BERLIN. Film guiding and edge reinforcing strip. Registered design 1504 444/57a dated Jan 11, 1941. In German.	1.50
11-18 PB L 74274	WESER FLUGZEUGBAU G.M.B.H., BREMEN. Synthetic resin tool for use in shaping light metals. Registered design 1504 446/7e dated Feb 25, 1941. In German.	1.50
19-21 PB L 74274	THEUERKORN, OSKAR (Inventor). Developer tube. Registered design 1504 484/57c dated May 23, 1941. In German.	1.50
22-24 PB L 74274	THEUERKORN, OSKAR (Inventor). Gas developer tube for photostatic reproduction. Registered design 1504 488/57c dated May 24, 1941. In German.	1.50
25-28 PB L 74274	KODAK AKT. GES., BERLIN. Nut for camera tripod. Registered design 1504 501/57a dated Jul 17, 1940. In German.	1.50
29-33 PB L 74274	I.G. FARBENINDUSTRIE A.G., FRANKFURT, A.M. Self-recording absorption spectrophotometer. Registered design 1504 515/42h dated Apr 3, 1941. In German.	1.50
34-37 PB L 74274	STOEDTNER, GEORG (Inventor). Card with windows for analysis and projection of miniature photographs. Registered design 1504 529/42h dated Oct 1, 1940. In German.	1.50
38-40 PB L 74274	SCHERING A.G., BERLIN. Padded packing X-ray photographic materials. Registered design 1504 534/57b dated Jan 13, 1941. In German.	1.50
41-47 PB L 74274	ZEISS IKON AKT. GES., DRESDEN. Arrangement for continuous processing of film strips. Registered design 1504 589/57c dated Oct 17, 1939. In German.	1.50
48-53 PB L 74274	KODAK AKT. GES., BERLIN. Camera shutter. Registered design 1504 607/57a dated Oct 23, 1940. In German.	1.50
54-56 PB L 74274	TELEFUNKEN GES. FÜR DRAHTLOSE TELEGRAPHIE M.B.H. Nondirectional microphone. Registered design 1504 670/21a dated Feb 13, 1940. In German.	1.50
57-59 PB L 74274	DEUTSCHE TELEFONWERKE UND KABEL-INDUSTRIE A.G., BERLIN. Arrangement for throat microphones. Registered design 1504 689/21a dated Feb 25, 1941. In German.	1.50

60-62 PB L 74274 MAUZ, PAUL (Inventor). Loudspeaker diaphragm installation. Registered design 1504 690/21a dated Feb 25, 1941. In German. 1.50

63-66 PB L 74274 IHAGEE, KAMERAWERK STEENBERGEN & CO., DRESDEN. Shifting arrangement for narrow film strips. Registered design 1504 740/57a dated Jul 1, 1940. In German. 1.50

67-68 PB L 74274 SKLORZ, MARTIN (Inventor). Color film projector. Registered design 1504 748/42h dated Jan 20, 1940. In German. 1.50

69-70 PB L 74274 LANGE, BRUNO (Inventor). Photoelectric flame photometer. Registered design 1504 755/42h dated Mar 11, 1941. In German. 1.50

71-73 PB L 74274 HÜBSCH, AUGUST, A.G., CHEMNITZ. Synthetic leather. Registered design 1504 760/8h dated Apr 3, 1941. In German. 1.50

74-77 PB L 74274 BÜSCHER, FRITZ (Inventor). Clamping device for electrically heated photographic dryers. Registered design 1504 976/57c dated May 8, 1939. In German. 1.50

78-80 PB L 74274 ZEISS IKON A.G., DRESDEN. Photoelectric cell for demonstration purposes. Registered design 1504 736/21g dated May 9, 1940. In German. 1.50

81-84 PB L 74274 ZEISS IKON A.G., DRESDEN. Device to eliminate picture overlap with respect to the secondary image, in stereoscopic photographs. Registered design 1504 902/42h dated Jun 23, 1941. In German. 1.50

85-88 PB L 74274 BACHEM, ERICH (Inventor). Album sheet for miniature diapositives. Registered design 1504 904/57c dated Jun 23, 1941. In German. 1.50

89-92 PB L 74274 KODAK A.G., BERLIN. Glue press for motion picture film. Registered design 1504 905/57c dated Jun 23, 1941. In German. 1.50

93-95 PB L 74274 ZEISS, CARL, JENA. Pressure plate for flattening film in a camera. Registered design 1504 907/57a dated Jun 23, 1941. In German. 1.50

96-98 PB L 74274 KLANGFILM G.M.B.H. Motion picture camera with built-in electric wiring. Registered design 1504 916/57a dated Nov 15, 1940. In German. 1.50

99-103 PB L 74274 KODAK A.G., BERLIN. Binocular reflex camera. Registered design 1504 961/57a dated Sep 23, 1938. In German. 1.50

104-107 PB L 74274 FORSCHUNGSGESELLSCHAFT FÜR FUNK UND TONFILMTECHNIK, BERLIN. Microphone with built in amplifier. Registered design 1505 001/21a dated Mar 28, 1941. In German. 1.50

108-111 PB L 74274 N. V. ONTWIKKELINGSINSTITUT, ARNHEIM, HOLLAND. Tension control for crepe yarn. Registered design 1505 020/86a dated Jun 3, 1941. In German. 1.50

112-115 PB L 74274 KALLE & CO., A.G., WIESBADEN. Yarn produced by twisting a superpolyamid ribbon with a paper ribbon. Registered design 1505 042/76c dated May 11, 1940. In German. 1.50

116-117 PB L 74274 SCHIRMER, CHRISTOPH (Inventor). Film pack adapter especially for series photographs of lungs. Registered design 1505 061/57a dated Mar 24, 1941. In German. 1.50

118-133 PB L 74274 TÖNNIES, HANS FERDINAND (Inventor). Camera shutter control. Registered design 1505 080/57a dated Jun 6, 1941. In German. 2.00

134-136 PB L 74274 FLORENTZ, WALTER (Inventor). Spring mounting for cleaning cylinders of spinning machines. Registered design 1505 090/76c dated Nov 18, 1939. In German. 1.50

137-140 PB L 74274 REINDL, JACOB (Inventor). Book-shaped case for a stereoscopic viewer and photographs. Registered design 1505 099/11e dated Sep 14, 1940. In German. 1.50

141-143 PB L 74274 FILMOSTO PROJECTION JOH. JOST, DRESDEN. Case for filing framed photographs or diapositives. Registered design 1505 101/57c dated Oct 4, 1940. In German. 1.50

144-145 PB L 74274 KUNSCH, WERNER, CO., BERLIN. Impregnated fabric for raincoats, etc. Registered design 1505 124/81 dated Apr 29, 1941. In German. 1.50

146-148 PB L 74274 SCHEIDT, KARL, & CO., SOLINGEN. Winding device for rubber strips. Registered design 1505 163/39a dated Oct 31, 1940. In German. 1.50

149-153 PB L 74274 VOIGTLÄNDER & SOHN A.G., BRAUNSCHWEIG. Camera with lens mount in automatic operating position. Registered design 1505 205/57a dated Jul 22, 1939. In German. 1.50

154-156 PB L 74274 KLEPPER WERKE, ROSENHEIM. Reinforced wearing apparel, especially overcoats, made of vinyl plastics. Registered design 1505 272/36 dated Jun 10, 1940. In German. 1.50

157-159 PB L 74274 KAHN, HUGO, & JOHANNES THÜMMEL, BERLIN. Container for developed roll films. Registered design 1505 298/57c dated Apr 18, 1941. In German. 1.50

160-165 PB L 74274 ZEISS IKON A.G., DRESDEN. Film moving and counting mechanism for cameras. Registered design 1505 306/57a dated Jun 19, 1939. In German. 1.50

166-168 PB L 74274 SCHRADER, GÖTZ (Inventor). Box camera. Registered design 1505 313/57a dated Jul 16, 1940. In German. 1.50

169-172 PB L 74274 KODAK A.G., BERLIN. Reflex camera. Registered design 1505 366/57a dated Sep 23, 1938. In German. 1.50

173-179 PB L 74274 KODAK A.G., BERLIN. Film winding device for roll film

camera or film magazine. Registered design 1505 372/57a dated Dec 23, 1939. In German. 1.50

180-182 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT A. M. Funnel or chute arrangement for bulk materials. Registered design 1505 392/81e dated Aug 30, 1940. In German. 1.50

183-186 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT A. M. Light filter for use in processing colored negatives. Registered design 1505 399/57a dated Dec 19, 1940. In German. 1.50

187-190 PB L 74274 — LICHTCOPIE APPARATE K.G., BERLIN. Chronometer for photographic printers. Registered design 1505 430/57c dated Jun 18, 1941. In German. 1.50

191-193 PB L 74274 — ZEISS IKON A.G., DRESDEN. Simple film loading device for motion picture cameras. Registered design 1505 477/57a dated Mar 16, 1940. In German. 1.50

194-203 PB L 74274 — KODAK A.G., DRESDEN. Filter attachment for enlargers, etc. Registered design 1505 480/57a dated Jun 15, 1940. In German. 1.50

204-210 PB L 74274 — KODAK A.G., DRESDEN. Compressed air chamber for drying motion picture film. Registered design 1505 481/57c dated Jun 15, 1940. In German. 1.50

211-213 PB L 74274 — LEITZ, ERNST, G.M.B.H., WETZLAR. Lighting arrangement for projectors. Registered design 1505 544/42h dated Aug 26, 1940. In German. 1.50

214-217 PB L 74274 — AEG, BERLIN. Film strip spool. Registered design 1505 580/57a dated Apr 25, 1939. In German. 1.50

218-219 PB L 74274 — MAETZIG, KURT (Inventor). Perforated film with wedge-type variable intensity. Registered design 1505 594/57b dated Feb 19, 1941. In German. 1.50

220-222 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT, A. M. Roll film cartridge. Registered design 1505 598/57b dated Mar 20, 1941. In German. 1.50

223-225 PB L 74274 — UNIVERSUM FILM A.G., BERLIN. Motion picture film with characteristic colored ends. Registered design 1505 599/57b dated Apr 3, 1941. In German. 1.50

226-229 PB L 74274 — KURMÄRKISCHE ZELLWOLLE AND ZELLULOSE A.G., WITTENBERGE, and others. Centrifuges for treatment of rayon masses (cakes). Registered design 1505 606/29a dated May 13, 1941. In German. 1.50

229-231 PB L 74274 — DEGE, CARL (Inventor). Supersensitive film. Registered design 1505 653/57b dated Oct 25, 1940. In German. 1.50

232-235 PB L 74274 — ZEISS IKON A.G., DRESDEN. Moving-coil galvanometer for exposure meter. Registered design 1505 697/21e dated Feb 14, 1940. In German. 1.50

236-240 PB L 74274 — KODAK A.G., BERLIN. Camera shutter. Registered design 1505 769/57a dated Mar 13, 1940. In German. 1.50

241-244 PB L 74274 — ZEISS IKON A.G., DRESDEN. Screen for stereoscopic projection. Registered design 1505 770/42h dated Jun 4, 1940. In German. 1.50

245-247 PB L 74274 — RUSSWURM, PETER (Inventor). Tripod adapter for cameras. Registered design 1505 795/57a dated May 16, 1941. In German. 1.50

248-253 PB L 74274 — KODAK A.G., BERLIN. Focal-plane shutter operation. Registered design 1505 836/57a dated Nov 2, 1940. In German. 1.50

254-255 PB L 74274 — TOBIS TONBILD-SYNDIKAT A.G., BERLIN. Film feeding device for developers. Registered design 1505 880/57c dated Jun 21, 1941. In German. 1.50

256-258 PB L 74274 — KOCH & STERZEL A.G., DRESDEN. Portable X-ray apparatus. Registered design 1505 881/57a dated Sep 6, 1940. In German. 1.50

259-262 PB L 74274 — KODAK A.G., BERLIN. Photographic printer. Registered design 1505 890/57a dated Mar 12, 1940. In German. 1.50

263-265 PB L 74274 — KODAK A.G., BERLIN. Metal film spool for cameras. Registered design 1505 894/57a dated Sep 14, 1940. In German. 1.50

266-268 PB L 74274 — KODAK A.G., BERLIN. Sun shield for cameras. Registered design 1505 895/57a dated Sep 14, 1940. In German. 1.50

269-271 PB L 74274 — HERBERLEIN & CO., A.G., WATTWIL, SWITZERLAND. Apparatus for application of impregnating materials to linens, etc. Registered design 1505 919/8a dated Jan 20, 1941. In German. 1.50

272-288 PB L 74274 — KODAK A.G., BERLIN. Retarding mechanism for focal plant shutters. Registered design 1505 925/57a dated Jun 7, 1939. In German. 2.00

289-291 PB L 74274 — SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Spring buffers for motors operating spindles, spinning pots, etc. Registered design 1505 930/29a dated Mar 5, 1940. In German. 1.50

292-294 PB L 74274 — ZEISS IKON A.G., DRESDEN. Rangefinder adapter. Registered design 1505 932/57a dated Mar 5, 1940. In German. 1.50

295-298 PB L 74274 — KODAK A.G., BERLIN. Condenser device for photographic printers, especially enlargers. Registered design 1505 933/57a dated Mar 11, 1940. In German. 1.50

299-304 PB L 74274 — KODAK A.G., BERLIN. Camera shutter. Registered design 1505 934/57a dated Mar 12, 1940. In German. 1.50

305-307 PB L 74274 — KODAK A.G., BERLIN. Flashlight device for cameras. Registered design 1505 935/57c dated Mar 15, 1940. In German. 1.50

308-310 PB L 74274 — ZEISS IKON A.G., DRESDEN. Hot cathode. Registered design 1505 938/21a dated May 20, 1940. In German. 1.50

311-317 PB L 74274 — SCHNEIDER, HUGO, A.G., DRESDEN and others. Searchlight (polarized light). Registered design 1505 983/46 dated Mar 7, 1938. In German. 1.50

318-320 PB L 74274 — TELEFUNKEN GES. FÜR DRAHTLOSE TELEGRAPHIE M.B.H., BERLIN. Mounting and feeding arrangement for phonograph-record producing equipment. Registered design 1505 987/42g dated May 13, 1939. In German. 1.50

321-327 PB L 74274 — EISENWERK WÜLFEL, HANNOVER. Control for ring-spinning machines. Registered design 1505 999/76c dated Dec 17, 1940. In German. 1.50

328-331 PB L 74274 — BERNING, ROBOT, & CO., DÜSSELDORF. Mechanical-electrical time switch and counter for remote-controlled cameras. Registered design 1506 065/57a dated Mar 22, 1941. In German. 1.50

332-335 PB L 74274 — KODAK A.G., DRESDEN. Flashlight device for cameras. Registered design 1506 117/57c dated Mar 28, 1940. In German. 1.50

336-340 PB L 74274 — KODAK A.G., BERLIN. Current conductor arrangement on camera flashlight devices. Registered design 1506 118/57c dated Mar 28, 1940. In German. 1.50

341-343 PB L 74274 — FRANKE & HEIDECKE, BRAUNSCHWEIG. Stereo film reels. Registered design 1506 164/57a, dated Jul 7, 1938. In German. 1.50

344-348 PB L 74274 — KODAK A.G., DRESDEN. Automatic focusing device and rangefinder. Registered design 1506 165/57a, dated Oct 3, 1938. In German. 1.50

349-351 PB L 74274 — KLANGFILM G.M.B.H., BERLIN. Drawing arrangement for sound motion pictures for producing various types of letters. Registered design 1506 170/42g, dated Mar 15, 1940. In German. 1.50

352-354 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. Camera equipped with electric exposure meter. Registered design 1506 181/57e, dated Dec 11, 1940. In German. 1.50

355-356 PB L 74274 — HAGENUK HANSEATISCH APPARATEBAU G.M.B.H., KIEL. Piezoelectric sound pick-up. Registered design 1506 198/42g, dated May 8, 1941. In German. 1.50

357-360 PB L 74274 — FUHRMANN, WILHELM (Inventor). Roll-film spool. Registered design 1506 240/57a, dated Mar 5, 1941. In German. 1.50

361-364 PB L 74274 — PHOTOHAUS MAX KLINKE, BERLIN. Platform for photographic subjects (for Police photography). Registered design 1506 250/57c, dated Jun 21, 1941. In German. 1.50

365-370 PB L 74274 — KODAK A.G., BERLIN. Central shutter as control for electric camera flash-light devices. Registered design 1506 292/57a, dated Apr 15, 1940. In German. 1.50

371-373 PB L 74274 — MEYER, WALTER (Inventor). Shutter release mechanism. Registered design 1506 400/57a, dated Mar 7, 1941. In German. 1.50

374-376 PB L 74274 — BÖTSCH, HERMANN (Inventor). Camera for X-ray screen photography on 9x12 film. Registered design 1506 420/57a, dated Jun 4, 1941. In German. 1.50

377-380 PB L 74274 — GEVAERT PHOTO-PRODUCTION N.V. OUDE-GOD, ANTWERP, BELGIUM. Roll-film spool. Registered design 1506 422/57a, dated Jun 7, 1941. In German. 1.50

381-383 PB L 74274 — SCHMIDT, PAUL (Inventor). Photographic printer. Registered design 1506 486/57c, dated Jul 3, 1941. In German. 1.50

384-388 PB L 74274 — KODAK A.G., BERLIN. Specifications for camera flashlight devices. Registered design 1506 505/57c, dated Apr 22, 1940. In German. 1.50

389-391 PB L 74274 — VEREINIGTE JUTE-SPINNEREIEN UND WEBEREIEN A.G., HAMBURG. Apparatus for manufacturing precision crossed -coils. Registered design 1506 514/76d, dated Jan 9, 1941. In German. 1.50

392-406 PB L 74274 — KODAK A.G., BERLIN. Camera flashlight synchroniser. Registered design 1506 545/57a, dated Mar 21, 1940. In German. 1.50

407-409 PB L 74274 — STEINHÖFEL, HERMANN (Inventor). Alternating control for motion picture projectors. Registered design 1506 567/57a, dated Jul 8, 1941. In German. 1.50

410-413 PB L 74274 — SCHNEIDER, HUGO A.G., LEIPZIG, and others. Polarized spotlight to permit glareless driving. Registered design 1506 571/4b, dated Apr 8, 1938. In German. 1.50

414-418 PB L 74274 — PATENTVERWALTUNG, PHILIPS G.M.B.H., BERLIN. Photographic printer with a liquid-cooled light source. Registered design 1506 581/57a, dated Nov 14, 1938. In German. 1.50

419-421 PB L 74274 — WALSCH, THEODOR (Inventor). Rotary arrangement for color-component images. Registered design 1506 596/57a, dated Mar 3, 1941. In German. 1.50

422-428 PB L 74274 — SCHMIDT, AAGE BANG (Inventor). Album-size proofs. Registered design 1506 600/54b, dated Mar 26, 1941. In German. 1.50

429-431 PB L 74274 — SCHUSTER, GOTTFRIED (Inventor). High-polish press for photographic purposes. Registered design 1506 620/57c, dated Jul 17, 1941. In German. 1.50

432-434 PB L 74274 — FILMKUNST, TOBIS G.M.B.H., BERLIN. Film-run arrangement for optical film-sound reproducing machines. Registered design 1506 626/57a, dated Nov 13, 1939. In German. 1.50

435-437 PB L 74274 — VOIGTLÄNDER & SOHN A.G., BRAUNSCHWEIG. Reflex camera with photoelectric exposure meter. Registered design 1506 667/57a, dated Jul 10, 1941. In German. 1.50

438-439 PB L 74274 — VOIGTLÄNDER & SOHN A.G., BRAUNSCHWEIG. Reflex camera. Registered design

1506 668/57a, dated Jul 10, 1941. In German. 1.50

440-442 PB L 74274 ZEISS IKON A.G., DRESDEN. Spring movement for cameras. Registered design 1506 671/57a, dated Aug 31, 1938. In German. 1.50

443-447 PB L 74274 LENNARTZ, HERBERT (Inventor). Universal cathode-ray oscillograph. Registered design 1506 733/21e, dated Jul 9, 1940. In German. 1.50

448-452 PB L 74274 EHM, WILHELM (Inventor). Sponge-like materials (polyvinyl plastics). Registered design 1506 744/39b, dated May 5, 1941. In German. 1.50

453-457 PB L 74274 VOIGTLÄNDER & SOHN, A.G., BRAUNSCHWEIG. Roll film camera with automatic film moving mechanism for various negative sizes. Registered design 1506 774/57a, dated Jul 1, 1941. In German. 1.50

458-466 PB L 74274 VOIGTLÄNDER & SOHN A.G., BRAUNSCHWEIG. Roll-film camera for two negative sizes. Registered design 1506 821/57a, dated Aug 2, 1941. In German. 1.50

467-477 PB L 74274 KODAK A.G., BERLIN. Camera flash-light synchroniser. Registered design 1506 836/57c, dated Aug 2, 1941. In German. 1.50

478-480 PB L 74274 WOLF, GEORG G.M.B.H., BERLIN. Camera flashlight arrangement for medical photography. Registered design 1506 856/57c, dated Apr 30, 1938. In German. 1.50

481-493 PB L 74274 ZEISS IKON A.G., DRESDEN. Roll-film camera with film-moving arrangement alternately winding and releasing the shutter. Registered design 1506 861/57a, dated Jun 15, 1939. In German. 1.50

494-496 PB L 74274 I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. Enlarger. Registered design 1506 862/57c, dated Sep 20, 1939. In German. 1.50

497-499 PB L 74274 ELEKTRIZITÄTSGESELLSCHAFT "SANITAS" M.B.H., BERLIN. Illumination for X-ray screen image photography. Registered design 1506 864/57a, dated Feb 1, 1940. In German. 1.50

500-503 PB L 74274 KODAK A.G., BERLIN. Current conductor arrangement for camera flashlight devices. Registered design 1506 866/57c, dated Apr 12, 1940. In German. 1.50

504-510 PB L 74274 KODAK A.G., BERLIN. Camera flash-light device with self-contained current conductor. Registered design 1506 867, dated Apr 15, 1940. In German. 1.50

511-514 PB L 74274 I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. Automatic film developing equipment. Registered design 1506 878/57a, dated Dec 24, 1940. In German. 1.50

515-517 PB L 74274 KIRSCHBAUM, PAUL (Inventor). Roll-film camera with interchangeable housing for light-proof film return. Registered design 1506 900/57a, dated Jul 18, 1941. In German. 1.50

518-521 PB L 74274 ZEISS IKON A.G., DRESDEN. Cathode ray oscillograph. Registered design 1506 915/21e, dated Jun 15, 1940. In German. 1.50

522-524 PB L 74274 BEEZ, HEINZ JULIUS (Inventor). Stereoscopic viewer. Registered design 1506 926/42h, dated Mar 15, 1941. In German. 1.50

525-527 PB L 74274 ZEISS IKON A.G., DRESDEN. Protective paper strips for roll films. Registered design 1506 956/57b, dated Jul 3, 1940. In German. 1.50

528-530 PB L 74274 STEINER, K & HECKELMANN, S., MÜNCHEN. Film with various light and color sensitive layers. Registered design 1506 968/57b, dated Apr 4, 1941. In German. 1.50

531-534 PB L 74274 STEINER, K. & HECKELMANN, S., MÜNCHEN. Film with various distributed light and color sensitive layers. Registered design 1506 969/57b, dated Apr 4, 1941. In German. 1.50

535-536 PB L 74274 HAUBOLD, C. G., A.G., CHEMNITZ. Apparatus for shrinking textile fabrics or yarns. Registered design 1506 985/8b, dated Jun 23, 1938. In German. 1.50

537-542 PB L 74274 KNEDEL, MELITTA (Inventor). Automatic film exposure arrangement using a selenoid coil. Registered design 1507 253/57a, dated Nov 15, 1939. In German. 1.50

543-545 PB L 74274 RUPPERT, OSKAR (Inventor). Film-cutting desk. Registered design 1507 262/57c, dated Feb 8, 1941. In German. 1.50

546-548 PB L 74274 THÜRINGISCHE ZELLWOLLE A.G., SCHWARZA. Spinning machine for production of synthetic yarns by the stretch-spinning method. Registered desgin 1507 284/29a, dated Jul 5, 1941. In German. 1.50

549-557 PB L 74274 METRAWATT A.G., NÜRNBERG. Photo-electric exposure meter. Registered design 1507 306/42h, dated Feb 5, 1938. In German. 1.50

558-562 PB L 74274 ZEISS IKON A.G., DRESDEN. Aerial camera with interchangeable optics. Registered design 1507 315/57a, dated Oct 10, 1939. In German. 1.50

563-566 PB L 74274 ZEISS IKON A.G., DRESDEN. Metal-link curtain for photographic shutters, jalousies, etc. Registered design 1507 316/57a, dated Oct 14, 1939. In German. 1.50

567-571 PB L 74274 ZEISS IKON A.G., DRESDEN. Arrangement for operating and setting the diaphragm opening ring of a camera objective (aerial cameras). Registered design 1507 317/57a, dated Oct 14, 1939. In German. 1.50

572-578 PB L 74274 ASKANIA WERKE A.G., BERLIN. Film strip processing apparatus. Registered design 1507 318/57c, dated Nov 8, 1939. In German. 1.50

579-582 PB L 74274 HERBER, MAX (Inventor). Shut-off devices for textile yarn machinery. Registered design 1507 328/86a, dated May 10, 1940. In German. 1.50

583-585 PB L 74274 PHRIX-ARBEITSGEMEINSCHAFT, HAMBURG, and others. Arrangement for cutting and stretching synthetic fiber ribbons. Registered design 1507 332/76b, dated Nov 13, 1940. In German. 1.50

586-590 PB L 74274 HÖCHST, KARL (Inventor). Plastic tube (for general use). Registered

design 1507 341/81o, dated Jun 19, 1941. In German. 1.50

591-593 PB L 74274 VEREINIGTE PHOTOKOPIERAPPARATE K.G., HAMBURG. Printing frame for photographic printers. Registered design 1507 348/57a, dated Jul 10, 1941. In German. 1.50

594-595 PB L 74274 VEREINIGTE PHOTOKOPIERAPPARATE K.G., HAMBURG. Clamping arrangement for cameras (when used for reproduction purposes). Registered design 1507 349/57a, dated Jul 10, 1941. In German. 1.50

596-599 PB L 74274 KODAK A.G., BERLIN. Roll-film camera. Registered design 1507 358/57a, dated Oct 28, 1940. In German. 1.50

600-601 PB L 74274 LORENZ, C., A.G., BERLIN. Facsimile equipment with power unit operating under constant r.p.m. Registered design 1507 024/21a, dated Dec 20, 1935. In German. 1.50

602-604 PB L 74274 HORN, H., & GRUNDLER, G., MÜNCHEN. Hermetically sealed plastic case (for watches, instruments, etc.). Registered design 1507 045/83a, dated Apr 12, 1941. In German. 1.50

605-609 PB L 74274 I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. Roll-film cartridge. Registered design 1507 063/57a, dated Jul 10, 1941. In German. 1.50

610-613 PB L 74274 I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN, GERMANY. Case for camera tripod. Registered design 1507 097/42c, dated Mar 6, 1941. In German. 1.50

614-616 PB L 74274 ENDERS, ALFRED (Inventor). Projection screen. Registered design 1507 124/42h, dated May 26, 1941. In German. 1.50

617-619 PB L 74274 EUGEN BAUER G.M.B.H., STUTTGART. Still-picture projector. Registered design 1507 138/42h, dated Jan 9, 1939. In German. 1.50

620-623 PB L 74274 ASKANIA WERKE A.G., BERLIN. Photometer. Registered design 1507 145/42h, dated Feb 7, 1940. In German. 1.50

624-626 PB L 74274 FLINK, F. and BRANDT, P. (Inventors). Viewer for diapositives. Registered design 1507 171/42h, dated May 22, 1941. In German. 1.50

627-630 PB L 74274 KODAK A.G., BERLIN. Meniscus objective. Registered design 1507 196/42h, dated Oct 18, 1938. In German. 1.50

631-632 PB L 74274 KOLOUSEK, LADISLAUS (Inventor). "Koloret" retouching equipment. Registered design 1507 236/57c, dated Jun 30, 1941. In German. 1.50

633-642 PB L 74274 MASCHINEN, ALFRED TEVES & ARMATUREN-FABRIK G.M.B.H., FRANKFURT AM MAIN. Gear pump. Registered design 1507 252/59e, dated Nov 10, 1939. In German. 1.50

643-647 PB L 74274 KODAK A.G., BERLIN. Motion picture film magazine. Registered design 1507 359/57a, dated Oct 28, 1940. In German. 1.50

648-654 PB L 74274 KODAK A.G., BERLIN. Motion picture camera. Registered design 1507 360/57a, dated Oct 31, 1940. In German. 1.50

655-659 PB L 74274 KODAK A.G., BERLIN. Shutter and flashlight release mechanism. Registered design 1507 361/57a, dated Oct 31, 1940. In German. 1.50

660-662 PB L 74274 TELEFUNKEN GES. FÜR DRAHTLOSE TELEGRAPHIE M.B.H., BERLIN. Element for cathode ray tubes consisting of a cathode and control grid. Registered design 1507 362/21g, dated Nov 20, 1940. In German. 1.50

663-676 PB L 74274 KODAK A.G., BERLIN. Roll film camera for interchangeable negative sizes. Registered design 1507 376/57a, dated Jul 24, 1941. In German. 1.50

677-690 PB L 74274 KODAK A.G., BERLIN. Double exposure-proof roll film camera. Registered design 1507 377/57a, dated Jul 25, 1941. In German. 1.50

691-704 PB L 74274 KODAK A.G., BERLIN. Roll film camera with shutter winding and film rolling control. Registered design 1507 378/57a, dated Jul 25, 1941. In German. 1.50

705-707 PB L 74274 BEUTLER, PETER (Inventor). Filter attachment for electric exposure meters. Registered design 1507 380/57a, dated Aug 8, 1941. In German. 1.50

708-712 PB L 74274 ZEISS IKON A.G., DRESDEN. Double exposure-proof roll film camera. Registered design 1507 391/57a, dated Jun 13, 1939. In German. 1.50

713-716 PB L 74274 NÜRNBERGER, WALTER (Inventor). Rubber coated structrual parts for machinery, aircraft, etc. Registered design 1507 398/39b, dated Apr 16, 1940. In German. 1.50

717-720 PB L 74274 KRISTEN, URSULA (Inventor). Spool clamping device for film strips. Registered design 1507 412/57a, dated Dec 4, 1940. In German. 1.50

721-728 PB L 74274 KODAK A.G., BERLIN. Camera synchronizing device. Registered design 1507 448/57a, dated Sep 28, 1940. In German. 1.50

729-733 PB L 74274 KODAK A.G., BERLIN. Camera. Registered design 1507 469/57a, dated Jun 21, 1940. In German. 1.50

734-736 PB L 74274 KAISER, FRITZ (Inventor). Plastic tube (for tooth paste etc.). Registered design 1507 497/81c, dated Jan 15, 1941. In German. 1.50

737-739 PB L 74274 HAFTA KUNSTSTOFFGESELLSCHAFT DR. HÜBNER & CO. K.G., BERLIN. Plastic tube (wound construction). Registered design 1507 581/81c, dated Jul 10, 1937. In German. 1.50

740-750 PB L 74274 HERAEUS, W.C., G.M.B.H., HANAU. Spinning head (for use with spinning nozzles for synthetic yarn). Registered design 1507 585/29a, dated Jan 16, 1940. In German. 1.50

751-753 PB L 74274 FERNSEH G.M.B.H., BERLIN. Television camera with combination shutter and range adjustments. Registered design 1507 587/21a, dated May 23, 1940. In German. 1.50

754-756 PB L 74274 PAUPEL & HAAKE EFHA WERKE K.G., BERLIN. Sausage casings. Registered design 1507 617/81c, dated Jul 30, 1941. In German. 1.50

757-759 PB L 74274 SCHUBERTH, HELMUTH (Inventor). Motion picture projector. Registered design 1507 627/42h, dated Feb 14, 1939. In German. 1.50

760-762 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN. Mechanism to prevent tearing of fiber tufts and fleece (on carding machines). Registered design 1507 656/76b, dated Jan 16, 1941. In German. 1.50

763-765 PB L 74274 — SEERING, HANS (Inventor). Swivel-type tripod head. Registered design 1507 664/42c, dated Mar 1, 1941. In German. 1.50

766-767 PB L 74274 — SCHEUERMANN, VALENTIN (Inventor). Episcopic objective. Registered design 1507 669/42h, dated May 14, 1941. In German. 1.50

768 PB L 74274 — WEBER, WALTER (Inventor). Polyamides or superpolyamides combined with other thermoplastics, for rain apparel. Registered design 1507 674/3b, dated May 27, 1941. In German. 1.50

769-771 PB L 74274 — LUCAS, PAUL (Inventor). Developing dish. Registered design 1507 680/57c, dated Jul 5, 1941. In German. 1.50

772-773 PB L 74274 — SCHAAL, OTTO (Inventor). Gage to determine silver precipitation of super-sensitive emulsions during developing. Registered design 1507 687/57c, dated Aug 11, 1941. In German. 1.50

774-779 PB L 74274 — SIEMENS & HALSKE A.G., BERLIN. Shutter and film movement control for cameras. Registered design 1507 699/57a, dated Jul 13, 1939. In German. 1.50

780-782 PB L 74274 — KÖRTING & MATHIESEN A.G., LEIPZIG. Lamp for screen printing. Registered design 1507 702/21f, dated Mar 4, 1941. In German. 1.50

783-785 PB L 74274 — HILBERT, HORST CO., LEIPZIG. Transparent projection screen. Registered design 1507 709/42h, dated Apr 24, 1941. In German. 1.50

786-790 PB L 74274 — SATOR, WILHELM (Inventor). Polarization attachment for cameras. Registered design 1507 747/42h, dated Jun 9, 1941. In German. 1.50

791-795 PB L 74274 — ZEISS IKON A.G., DRESDEN. Photoelectric exposure meter, especially for studio photography. Registered design 1507 783/42h, dated Jan 18, 1940. In German. 1.50

796-799 PB L 74274 — ZEISS IKON A.G., DRESDEN. Interchangeable track for still projectors, especially stereoscopic projectors. Registered design 1507 785/42h, dated Mar 13, 1940. In German. 1.50

800-803 PB L 74274 — KODAK A.G., BERLIN. Film movement mechanism for motion picture cameras. Registered design 1507 790/57a, dated May 19, 1939. In German. 1.50

804-807 PB L 74274 — ZEISS IKON A.G., DRESDEN. Arrangement of optics for stereoscopic cameras. Registered design 1507 794/42h, dated Jun 15, 1940. In German. 1.50

808-812 PB L 74274 — ZEISS IKON A.G., DRESDEN. Lighting equipment for projection purposes featuring a mercury arc lamp. Registered design 1507 802/42h, dated Oct 5, 1940. In German. 1.50

813 PB L 74274 — KRIEGER, KARL (Inventor). Plastic material suitable for map purposes. Registered design 1507 822/42h, dated Jun 7, 1941. In German. 1.50

814-818 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN. Color control device for photographic reproduction purposes. Registered design 1507 833/57c, dated Apr 25, 1940. In German. 1.50

819-821 PB L 74274 — KURTURKISCHE ZELLWOLLE UND ZELLULOSE A.G., WITTENBERGE, and others. Apparatus for filtration and drying of chemical products. Registered design 1507 868/42, 1, dated May 28, 1941. In German. 1.50

822-824 PB L 74274 — OPTICOTECHNA G.M.B.H., PRERAU, CZECHOSLOVAKIA. Photographic enlarger. Registered design 1507 879/57a, dated Jul 4, 1941. In German. 1.50

825-826 PB L 74274 — SCHIEDT, ERWIN (Inventor). Film data indicator for cameras. Registered design 1507 895/57a, dated Jul 31, 1941. In German. 1.50

827-830 PB L 74274 — ZEISS IKON A.G., DRESDEN. Photocell for push-pull operation (for film sound reproducers). Registered design 1507 906/42g, dated Jan 29, 1936. In German. 1.50

831-834 PB L 74274 — LORENZ, C., A.G., BERLIN. Steel tape recorder. Registered design 1507 907/42g, dated Dec 24, 1936. In German. 1.50

835-837 PB L 74274 — BOSCH, ROBERT G.M.B.H., STUTTGART. Movie projector. Registered design 1507 910/57a, dated Feb 24, 1938. In German. 1.50

838-853 PB L 74274 — KODAK A.G., BERLIN. Film-strip developing apparatus. Registered design 1507 914/57c, dated Mar 15, 1939. In German. 2.00

854-858 PB L 74274 — KODAK A.G., BERLIN. Camera with photoelectric exposure meter. Registered design 1507 915/57a, dated Jul 14, 1938. In German. 1.50

859-861 PB L 74274 — A.E.G., BERLIN. Terminal for a plastic sheathed electric cable. Registered design 1507 934/21c, dated Feb 10,1941. In German. 1.50

862-864 PB L 74274 — TOBIS TONBILD-SYNDIKAT A.G., BERLIN. Sound motion picture projector. Registered design 1507 944/42g, dated May 17, 1941. In German. 1.50

865-866 PB L 74274 — TOBIS TONFILM-SYNDIKAT A.G., BERLIN. Switches for sound motion picture cameras and projectors. Registered design 1507 945/42g, dated May 17, 1941. In German. 1.50

867-871 PB L 74274 — BOSCH, ROBERT G.M.B.H., STUTTGART. Motion picture camera. Registered design 1507 975/57a, dated Feb 26, 1938. In German. 1.50

872-874 PB L 74274 — HEINKEL, ERNST (Inventor). Pressure-proof full-vision aircraft turret. Registered design 1507 977/62b, dated Nov 5, 1938. In German. 1.50

875-878 PB L 74274 — ZEISS IKON A.G., DRESDEN. Winding for use in developing, fixing, etc. of perforated film strips. Registered design 1507 983/57c, dated Mar 23, 1940. In German. 1.50

879-884 PB L 74274 — ZEISS IKON A.G., DRESDEN. Aerial camera. Registered design 1507 044/57a, dated Oct 21, 1938. In German. 1.50

885-890 PB L 74274 — ZEISS IKON A.G., DRESDEN. Film magazine for aerial cameras.

Registered design 1508 045/57a, dated Oct 25, 1939. In German. 1.50

891-894 PB L 74274 — ZEISS IKON A.G., DRESDEN. Motion picture camera. Registered design 1508 052/57a, dated May 11, 1940. In German. 1.50

895-898 PB L 74274 — WACKER, ALEXANDER GESELLSCHAFT FÜR ELEKTROCHEMISCHE INDUSTRIE, G.M.B.H., MUNCHEN. Polyvinyl alcohols for production of costume jewelry, etc. Registered design 1508 067/39b, dated May 21, 1941. In German. 1.50

899-901 PB L 7427 — MÜLLER, HANNS (Inventor). Spring movement for cameras. Registered design 1508 099/57a, dated Feb 24, 1941. In German. 1.50

902-904 PB L 74274 — GÖSSEL, OTTO & CO., GLASHÜTTE. Contact printer. Register design 1508 125/57a, dated Aug 25, 1938. In German. 1.50

905-907 PB L 74274 — SIEMENS SCHUCKERTWERKE A.G., BERLIN. Electric light socket. Registered design 1508 131/21f, dated Nov 16, 1940. In German. 1.50

908-911 PB L 74274 — HEINZ & SOHN, LIMBACH. Reinforced shirt collar. Registered design 1508 161/3a, dated Feb 10, 1941. In German. 1.50

912-916 PB L 74274 — PRESSWERK A.G., ESSEN. Apparatus for production of compressed plastic materials. Registered design 1508 168/39a, dated Sep 22, 1939. In German. 1.50

917-919 PB L 74274 — PISCHEL, RUDOLF (Inventor). Glareless searchlight. Registered design 1508 173/4b, dated Oct 19, 1940. In German. 1.50

920-922 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN. Sound motion picture film. Registered design 1508 212/42g, dated Nov 12, 1940. In German. 1.50

923-927 PB L 74274 — HERMINGHAUS & CO., G.M.B.H., WUPPERTAL. Feeding device for twisting frames for production of novelty yarn. Registered design 1508 256/76c, dated Mar 23, 1939. In German. 1.50

928-932 PB L 74274 — "SELPERIT" ÖSTERREICHISCH -AMERIKANISCHE GUMMIWERKE A.G., VIENNA. Plywood suitable for printing. Registered design 1508 263/15k, dated Mar 16, 1940. In German. 1.50

931-934 PB L 74274 — KODAK A.G., BERLIN. Adjustable scale for camera flashlight attachments. Registered design 1508 266/57c, dated May 16, 1940. In German. 1.50

935-938 PB L 74274 — FREDERIK, JAN (Inventor). Conveyor-belt stretching arrangement. Registered design 1508 270/76c, dated Nov 21, 1940. In German. 1.50

939-943 PB L 74274 — I.G. FARBENINDUSTRIE A.G., FRANKFURT AM MAIN. Pasteboard shipping container for negatives. Registered design 1508 285/57c, n. d. In German. 1.50

944-948 PB L 74274 — DYNAMIT A.G., TROISDORF. Plastic covering for intersecting cylinders of spinning frames. Registered design 1508 290/76c, dated Aug 13, 1941. In German. 1.50

949-952 PB L 74274 — SANTE DE GAETANO (Inventor). Case for photographs, railroad tickets, etc. Registered design 1508 296/33d, dated Nov 21, 1940. In German. 1.50

949-952 PB L 74274 — STADLER, FRANZ (Inventor). Hygienic cigarette holder. Registered design 1508 341/79b, dated Oct 6, 1939. In German. 1.50

953-956 PB L 74274 — MESSER UND STAHLWARENFABRIK FRANZ PILS SÖHNE, STEYR, AUSTRIA. Method of fastening plastic handles for knives, forks, etc. Registered design 1508 346/69, dated Mar 12, 1941. In German. 1.50

957-961 PB L 74274 — ZITTAUER MASCHINENFABRIK A.G., ZITTAU. Drying arrangement for cross coils and other wound textile articles. Registered design 1508 347/8b, dated Mar 26, 1941. In German. 1.50

962-963 PB L 74274 — AHLHAUS, HUGO CO., HOLVER. Plastic hardware fittings. Registered design 1508 360/68c, dated Aug 12, 1941. In German. 1.50

964-967 PB L 74274 — SACHSENRÖDER, G. (Inventor). Roll film packing. Registered design 1508 377/57b, dated Jan 26, 1939. In German. 1.50

968-971 PB L 74274 — FUHRMANN, WILHELM (Inventor). Roll film spool for miniature cameras. Registered design 1508 397/57a, dated Jul 30, 1941. In German. 1.50

972-973 PB L 74274 — KODAK A.G., BERLIN. Shutter and flashlight release mechanism. Registered design 1508 410/57a, dated Aug 22, 1941. In German. 1.50

974-978 PB L 74274 — TELEFUNKENPLATTE G.M.B.H., BERLIN. Sound track-splicing equipment. Registered design 1508 422/42g, dated Dec 1, 1937. In German. 1.50

979-981 PB L 74274 — DENNERT & PAPE FABRIK MATH. UND GEOD. INSTRUMENTE, HAMBURG. Slide rule based on the "Seo-Foto" method. Registered design 1508 441/42m, dated Jul 5, 1941. In German. 1.50

982-987 PB L 74274 — KODAK A.G., BERLIN. Electromagnetic shutter release mechanism. Registered design 1508 456/57a, dated Aug 22, 1941. In German. 1.50

988-989 PB L 74274 — VOWE, FRITZ (Inventor). Suitcase of artificial leather, cardboard, on plastics. Registered design 1508 469/33b, dated Aug 12, 1941. In German. 1.50

990-992 PB L 74274 — KLANGFILM G.M.B.H., BERLIN. Pick-up device for production of sound motion pictures with stereo-effect. Registered design 1508 472/42g, dated Dec 3, 1938. In German. 1.50

993-994 PB L 74274 — HASSEL, FRANZ (Inventor). Plastic shoe heel with interchangeable lifts. Registered design 1508 481/71a, dated Jan 23, 1941. In German. 1.50

995-997 PB L 74724 — SCHMECK, PAUL (Inventor). Blueprint equipment with glass semi-cylinder. Registered design 1508 508/57c, dated Aug 22, 1941. In German. 1.50

998 PB L 74724 — SCHNEIDER, HUGO, A.G., LEIPZIG, and others. Adjustment for polaroid automobile spotlight. Registered design 1508 523/4b, dated Apr 19, 1938. In German. 1.50

999-1000 PB L 74724 — TELEFUNKEN GES. FÜR DRAHTLOSE TELEGRAPHIE M.B.H., BERLIN. Center ring mounting for crystal oscillator. Registered design 1508 580/21a, dated Sep 10, 1940. In German. 1.50

REGISTER OF PATENTS AVAILABLE FOR LICENSING OR SALE

Information on the following patents can be obtained from the U. S. Patent Office, Washington 25, D. C.

The "Groups" appearing after the patent abstracts are based on the Standard Industrial Classification Manual, Vol. I, Manufacturing Industries, Executive Office of the President, Bureau of the Budget.

Official Gazette, December 2, 1947.

PAT. 2,391,287. Food dispensing system and apparatus. Patented Dec 18, 1945.
Individual tables, the tops of which are rotatable, are divided into two sections by a partition allowing an attendant to revolve table to clear used dishes so that a clean half is constantly exposed to patron's view. Associated with table is a box-like container into which food is placed for ready removal by customer, the box being independently turnable does not interfere with table top. Attendant may be concealed from view, the customer indicating his choice by depositing check or other means suggested in patent. Adaptable to self-service restaurants for setup in aisle formation. (Owner) James Anchor, 9550 Terry Ave., Detroit 27, Mich. Group 28-21-22. Reg. No. 8,845.

PAT. 2,372,765. Exhaust concealing and silencing device. Patented Apr 3, 1945.
A manifold adapted to be connected to the cylinders of a radial aircraft engine has a series of radial inwardly extending pipes with their ends directed rearwardly and connected to the end of an elongated cylindrical housing which has a tail pipe. The ends of the radial pipes are grouped in a circle about a shaft which extends axially through a major portion of the housing. Inside the housing a vaned disc and spaced impellers are mounted on the shaft. An outer casing has air inlets and outlets, respectively, near its front and rear ends for permitting rearward flow of cool air to contact the outer surface of the manifold, housing and tail pipe. Hot gases discharged into the housing impinge against the vaned disc which rotates and initially retards and breaks up the gases, which action is repeated as the gases flow rearwardly and successively impinge against the impellers. The gases in flameless condition are discharged to the atmosphere in a smooth relatively quiet stream at reduced pressure. The housing may also be provided with cool air inlets and an auxiliary discharge pipe. (Owner) Nolan O. Collier, Jr., 720 N. W. 56th St., Miami 38, Fla. Groups 37-22; 38-31. Reg. No. 8,846.

The following 13 patents have been offered for license or sale on reasonable terms by the Solar Aircraft Company, 2200 Pacific Highway, San Diego 12, Calif.

PAT. 2,280,953. Exhaust structure. Patented Apr 28, 1942.
Manifold is particularly adapted for radial engines of aircraft. Manifold of sectional construction, which may have a closed continuous annular passage, is provided with a plurality of perforated, frusto-conical baffles within the passage. The baffles retard the flow of exhaust gases through the manifold, create lower pressure areas adjacent the inlet branches of the manifold, throttle and dampen explosions, and thus tend to produce a quiet, even flow from the manifold and efficient scavenging of the cylinders. Groups 35-19; 37-22. Reg. No. 8,847.

PAT. 2,337,062. Pickling solution and method. Patented Dec 21, 1943.
This patent shows pickling solutions for removing scale from stainless steel, and methods whereby the solutions may be readily regenerated and maintained in highly efficient condition during extended use. The pickling solutions contain three essential acids, preferably sulfuric acid, nitric acid, and hydrofluoric acid in varying proportions. The solutions are analyzed after the pickling operations and regenerated. Many specific solutions and procedures are described in detail in the patent. Group 28-89-93. Reg. No. 8,848.

PAT. 2,381,426. Flexible exhaust line joint. Patented Aug 7, 1945.
Light, flexible joint of the double ball and socket type is particularly useful in aeroplane engine exhaust lines. Two sleeves in telescoping relation are formed with spherical portions at their remote ends for nesting engagement with spherical portions on the respective ends of two conduits being connected. An annular resilient packing is provided between each pair of nested spherical members at their equator with cooperative bearing surfaces provided on both sides of the equator. The telescoped sleeves have free sliding fit with each other to permit movement relative to each other but separation or rotation of the nested spherical portions is prevented. The selection of material and packing constitute important features. Modifications are shown. Groups 35-89; 37-22. Reg. No. 8,849.

PAT. 2,385,631. Centrifugal casting apparatus. Patented Sept. 25, 1945.
This centrifugal casting apparatus has separable funnel, distributor and mold sections which are preheated to relatively high temperature and rapidly assembled in the casting machine. This preheating of all elements which enter into the path of metal flow insures a smooth, non-turbulent flow of metal, eliminating the usual difficulties incident to sharp temperature drops from retort to casting machine during the pouring and charging operations. The parts are also locked in assembled condition and maintained in such condition despite any shrinkage which takes place during the operating cycle. The casting produced has a finished surface devoid of pits or cracks and possesses unusual temperature and compression strength though made of metals and alloys of relatively high or low melting points. Groups 33-34; 35-42. Reg. No. 8,850.

PAT. 2,383,706. Method of making preliminary shaping dies. Patented Aug 28, 1945.
This patent simplifies the procedure, requiring less skill, and accelerates the production of dies for use in preliminary stages of multi-stage stamping operations by using the patterns of the finish dies in preparing preliminary die patterns. A composite flexible sheet of wax and fabric is built up and shaped in a suitably coated finish die pattern. The sheet is allowed to cool until it becomes relatively stiff when it can be readily removed and flattened out by bending to reduce its depth and increase its projected area without materially increasing its absolute area. The sheet is then used in casting a preliminary die pattern and if more than one preliminary pattern is needed, it is further flattened out and reused. Groups 35-42-43; 39-98. Reg. No. 8,851.

PAT. 2,402,788. Method of making dies. Patented June 25, 1946.
Method facilitates making dies for stamping fractional sections of irregularly shaped conduits such as aeroplane engine exhausts. The method involves simplified procedure that may be performed by relatively unskilled workmen whereby a starting die pattern (formed directly from the mock-up of the conduit to be produced) is built up to produce a final die pattern having a cavity of predetermined greater depth than that of the starting pattern. The pattern is used to produce dies for stamping flanged arcuate half-sections of predetermined greater depth than the finished sections after they have been trimmed by cutting away the flanges and a part of the side walls. Groups 35-42-43; 39-91. Reg. No. 8,852.

PAT. 2,405,403. Carbon arc electrode holder. Patented Aug 6, 1946.
In this holder constant electrical contact between the carbon electrode and its holder is maintained while the electrode is removed or replaced in the holder to eliminate deleterious arcing. The channel in the holder for receiving the electrode is open at its top. A contact shoe having limited vertical and rocking movement is mounted in top of the holder with its bottom arcuate face seating against the top of the electrode. A pair of springs yieldingly urge the shoe into constant electrical contact with the electrode after it has been released in the holder. A hand screw engages the top of the shoe. The electrode is released from or locked in the holder by selectively turning the hand screw in the desired direction. Group 36-12-19.
Reg. No. 8,853.

PAT. 2,409,254. Apparatus for die-forming sheet material. Patented Oct 15, 1946.
In this machine press and hammer action are combined in a single machine by operating either hydraulically or pneumatically the platen which carries one of the dies. The machine is selectively controllable for either operation. Thus, a work piece may be slowly pressed between the dies to initially perform it and then hammered to finish it, thereby eliminating the use of cushioning pads. The platen is connected to the pistons in two vertically aligned-cylinders by a single connecting rod so that platen and both pistons reciprocate in unison in response to the application of pressure fluid to either cylinder.
Group 35-42-43. Reg. No. 8,854.

PAT. 2,416,621. Fan. Patented Feb 11, 1947.
This fan, particularly adapted for use on desks, delivers a gentle uniform diverging stream of filtered air. A conventional electric fan is mounted within a padded, drum-shaped casing having an air filter in its rear wall and a series of conical baffles in its front wall which act as an air distributor. Filtered air is uniformly distributed through the baffles by an inner deflecting structure. Heating coils may be mounted around the fan within the casing to provide a supply of heated air. Group 36-21.
Reg. No. 8,855.

PAT. 2,417,250. Flexible joint. Patented Mar 11, 1947.
Light, flexible joint of the double ball and socket type for use in conduits conveying corrosive or hot gases at extreme temperatures is extremely useful in aeroplane engine exhaust lines. The joint, which may be devoid of packing, includes a Venturi arrangement whereby hot gases are directed in a path through the middle of the joint at accelerated velocity without directly contacting the slidable nested spherical surfaces or flowing into the clearance between the bearing surfaces, thus minimizing the deleterious effect of the gases upon joint. The Venturi action reduces the pressure adjacent the spherical surfaces to a value that may be below ambient or atmospheric pressure so that if there is any leakage between the sliding spherical sections it will be leakage of outside air into the joint rather than leakage of exhaust gases. Modifications are shown.
Groups 35-69; 37-22. Reg. No. 8,856.

PAT. 2,418,566. Fuel-air mixture control for aircraft heaters. Patented Apr 8, 1947.
Combustion heater functions efficiently at high altitudes without the use of a supercharger. The heater is self-regulating to compensate for different atmospheric pressures at different altitudes. It is simple and has no moving parts other than control valves. Propane is preferred as fuel for this heater.
Groups 36-21; 37-22. Reg. No. 8,857.

PAT. 2,418,649. Pressure casting machine. Patented Apr 8, 1947.
Mold is received and sealed on a stand which includes a top for the mold and a seat vertically adjustable by means of a threaded post and cam arrangement to accommodate molds of different heights. A cam holder, rotatably carried by the post, moves to a correctly aligned position whenever the post is adjusted. In operation, the mold is preheated and quickly placed and sealed into the casting machine by operation of a cam handle and metal ladled through a head into the mold cavity. The castings produced have a uniform density, are accurately shaped and have a surface which does not require machining. Any type of mold may be used with the machine. Groups 33; 34; 35-42.
Reg. No. 8,858.

PAT. 2,420,153. Flexible exhaust conduit assembly. Patented May 6, 1947.
This patent shows a strong leak-proof welded joint between a length of flex tubing (of the type used in exhaust conduits of aircraft engines) and a terminal fitting therefor. In forming the joint, a collar is slipped over the end of the tubing with the end of the tubing either flush with or projecting slightly beyond the edge of the collar. An integral nipple of a terminal fitting is then telescoped within the tubing. An annular fillet of weld metal is then bonded to the edge of the collar end of the tubing and outer surface of the nipple. The walls of the collar and nipple are of substantially greater thickness than the walls of the tubing. Groups 35-69; 37-22.
Reg. No. 8,859.

PAT. 2,238,294. Typewriter stand. Patented Apr 15, 1941.
A portable adjustable typewriter stand, with a tripod frame of tubular metal carrying swiveled caster wheels or rollers, may be adjusted to counteract slight variations in floor level. The legs of the tripod are brought together and welded into a vertical upper portion to form a pedestal to which is attached a horizontally disposed tubular cross head. In the opposite ends of this head are the stem portions of T-shaped brackets which are fastened in an adjustable spread relation to each other by set screws in the head. On the ends of the T's are cups adjustable to insure a level rest. Set screws fix the cups securely in adjusted position to fit different types of standard typewriters. An adjustable work holder is included. (Co-owner) Elmer J. Scott, 5613 5th St., South, Arlington, Va. Group 25-21-22. Reg. No. 8,860.

PAT. 2,332,413. Cotton drying machine.
Patented Oct 19, 1943.
This patent relates to a machine for automatically cleaning trash, fuzz, lint, etc., from the air passage of a cotton drier, which does not interfere with feeding the cotton to the cleaner and gin. A rotary brush structure mounted on a skeleton frame operates against the inner surface of an arcuate screen in a direction counter to the normal flow of air through the screen. The matter removed from the screen, and the cotton are directed to the outlet passage of the drier leading to the cleaner or gin stands. (Co-owner) Martin I. Teague, Rochester, Tex. Group 35-59. Reg. No. 8,861.

PAT. 2,420,005. Curtain rod. Patented May 6, 1937.
Adjustable telescopic curtain rod, made from sheet metal, requires no fastenings, but is self-anchoring when merely set properly on the upper member of a window frame or the like. The curved ends of the rod terminate in T-shape. One of the arms of the T at each end of the rod is bent inwardly to provide an element to rest on the top of the window casing when the rod is in place. The other portion of the T rests against the side casing of the window and is flush with the wall. The weight of the curtain exerts a downward pull on the body of the rod which keeps the cross pieces closely against the wall and top of the window frame, thus automatically locking the rod in place. (Owner) Joseph Nuccio, 1347 North Wells St., Chicago, Ill. Groups 26-66; 40. Reg. No. 8,862.

PAT. 2,424,016. Game piece projector.
Patented July 15, 1947.
This invention relates to a collapsible game board which forms a backing and playing field, and a shiftable game piece projector for making various plays across the board. The projector comprises two hinged narrow strips with an opening at center for insertion of a lever provided with a cross bar at end for supporting a game piece. A basket or other receptacle is hinged to back wall for the reception of the projected game pieces and when not in use will fold flatly thereon. Game boards are made from cardboard, fiber board and the like, and game pieces are balls or discs of similar material or plastic. (Owners) Hugh P. Botts and Laurence G. Botts. Address correspondence to Hugh P. Botts, 203 West 78th St., New York 24, N. Y. Group 39-41. Reg. No. 8,863.

PAT. 2,119,184. Motor safety fuse.
Patented May 31, 1938.
Fuse automatically opens the ignition circuit of a motor vehicle when the engine overheats. A fusible member and a fusbile wire are enclosed by a hollow insulated body member having a vented cap. When the engine overheats the fusible element will ignite and burn, melting the wire. A switch is provided for bypassing the circuit around the fuse in an emergency. (Owner) Elmer Stassen, Box 196, Wanatah, Ing. Groups 28-84; 36-19. Reg. No. 8,864.

PAT. 2,425,546. Centrifugal drier for hats.
Patented Aug 12, 1947.
This invention relates to an enclosed cabinet for drying hats which are being cleaned, and collecting the used cleaning fluid. A motor with a hat supporting block mounted on drive shaft is revolved at a high rate of speed and the cleaning fluid is thrown onto a drain board. The fluid passes through a discharge opening to a receptacle in the lower compartment with valve controlled discharge pipe which empties into a strainer. The fumes are discharged through chimney in upper compartment. Windows are provided through which the hat may be observed during the process. (Owner) William Lindsey, 702 East Washington St., Syracuse 2, N. Y. Group 35-82. Reg. No. 8,865.

PAT. 2,425,561. Pocket pen and pencil protector.
Patented Aug 12, 1927.
A flexible member, made of rubber and contoured to fit inside pocket, has sleevelike portions for supporting pen, pencil, comb, etc. Flaps or saw-tooth edges spread out in pocket and cause a tight fit. (Owner) Frederick W. Quidas, 615 Third Ave., New York 16, N. Y. Groups 22-12; 30-51; 40. Reg. No. 8,866.

PAT. 2,298,439. Detachable combination shade and curtain rod bracket. Patented Oct 13, 1942.
An extensible shade holder, made of sheet metal, may be attached to or removed from a window casing without the use of fasteners or tools. For a single window right and left end brackets are used, and a center bracket is added when double windows are encountered. These brackets have prong extensions designed to make a tight friction fit behind the casement member to keep the holder securely in place. The brackets receive the ends of the roller shade in the conventional style. Curtain rod support arms are included, for carrying the usual curtain and overdrape. (Co-owner) Elliott E. Vaughan, c/o Colonial Hotel, Shreveport, La. Groups 25-62; 33-73; 40. Reg. No. 8,867.

PAT. 2,389,953. Drum brake for use in general engineering. Patented Nov 27, 1945.
A drum brake, for use in general engineering, having a brake ring member arranged within the drum and expansible against the action of a spring by means of a brake cam. To facilitate repair to the wheel or brake, the tension cable for actuating the brake is detachably arranged inside the drum at the free end of the brake arm. A closable aperture in the lid of the drum is provided through which the cable can be removed after detachment from its connection with the brake arm. (Owner) Lothar Burgerstein. Address correspondence to Munn, Liddy & Glascum, 24 West 40th St., New York 18, N. Y. Group 35-42. Reg. No. 8,868.

PAT. 2,128,820. Furnace. Patented Aug 30, 1938. A furnace, substantially triangular in horizontal section, is provided with a relatively deep firebox and a hollow dome for water. A header is suspended below the dome by spaced channel members which also provide communication between dome and header. This provides a tortuous path below the header, around its longitudinal side edges and thereabove. The channel members are connected at their rear to a flue with their front ends spaced from the front of the furnace to provide a discharge passage for the products of combustion. Above the firebox a pair of hollow members extending inwardly from the side walls of the furnace have their inner ends spaced apart to provide a restricted passage for products of combustion from the firebox to a flat passage below the header. These hollow members communicate with the dome and with continuous water chambers formed between spaced walls of the furnace. (Owner) I. Basil Holtz, P. O. Box 625, Weirton, W. Va. Group 33-65. Reg. No. 8,869.

PAT. 2,152,409. Two-speed differential. Patented Mar 28, 1939. Differential of substantially conventional type also includes a high speed drive whereby the vehicle may be driven along the level at higher speed. The usual drive shaft is made hollow to receive a second drive shaft having a gear thereon which meshes with a supplemental ring gear in the differential which is smaller than the usual ring gear. A clutch mechanism is provided for changing from one drive to the other by alternately rendering one drive shaft operative and the other inoperative. (Owner) I. Basil Holtz, P. O. Box 625, Weirton, W. Va. Group 38-31. Reg. No. 8,870.

PAT. 2,214,416. Hydraulic power transmission. Patented Sept 10, 1940. Transmission is of the fluid type in which a vaned rotor is revolved by fluid set in motion by a vaned driving rotor. Cooperative clutch elements are provided on the driving rotor and an outer laterally slidable section of the driven rotor. When the driving rotor attains sufficient speed, the fluid acts on lateral angularly positioned blades of the driven rotor causing its outer section to shift laterally to bring the clutch elements into operative engagement to lock the rotors together. When the driven rotor tends to revolve faster than the driving rotor, as when traveling down a hill, the outer section will move laterally in the opposite direction to bring the clutch elements into engagement so that the engine will act as a brake. The rotors are also provided with an independent manually operated clutch to lock the rotors together for direct drive when desired. (Owner) I. Basil Holtz, P. O. Box 625, Weirton, W. Va. Group 38-31. Reg. No. 8,871.

PAT. 2,400,821. Vaporizing tank. Patented May 21, 1946. Vaporizing tank for connection to the intake manifold of an internal combustion engine vaporizes the fuel. The tank is adapted to contain liquid fuel with a vapor space above the fuel. A heater heats the fuel in the tank. The tank, at opposite ends of the vapor space, is provided with a valve controlled air inlet and a valve controlled discharge outlet. A combined valve and atomizer positioned in the vapor space discharges a jet of fuel into the path of the air being drawn through the vapor space when the inlet valve is open. To supply a richer mixture of fuel for starting the engine, provision is made for substantially closing the air intake valve and simultaneously actuating the valve of the atomizer to direct the fuel through another jet located exteriorly of the tank at a point adjacent to the intake manifold. Should the vehicle overturn, a weighted cam is automatically actuated to close the air inlet valve to prevent accidental leakage of fuel therethrough. (Co-owners) Russell Frank Goode, Jacob Edward Keyser, and Charles Wood Keyser, Address correspondence to J. Preston Swecker, National Press Bldg., Washington 4, D. C. Groups 35-12-19; 38-31. Reg. No. 8,872.

Government Owned Patent

The following patent, owned by the United States Government, as represented by the Secretary of the Interior, is available for licensing upon a non-exclusive, royalty-free basis:

PAT. 2,424,844. System for heating liquids. Patented July 29, 1947. (Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757). A system for heating liquids, in combination with a coal stoker, utilizes the heat units which would otherwise be wasted by conduction through the walls of a flue. The water storage tank is supplied with preheated water from water jacket through a pipe which discharges water near bottom of tank. The discharge pipe has a bypass circulating pipe which provides for a return circulation of water through the tank when the temperature of water gets too low. The system remains operative, consuming no power, for about 80 per cent of the time. Groups 35-67; 36-21. Reg. No. 8,873.

Regulations under which licenses are granted are issued by the Secretary of the Interior. Applications for licenses should be made to the Solicitor, Department of the Interior, Washington 25, D. C.

Patents Dedicated to the Public

The following patents owned by Morton Brown of New York, N. Y., have been dedicated to the people of the United States of America by instruments recorded in the United States Patent Office. The instruments read in part as follows:

"• • • do hereby assign, transfer, and dedicate to the People of the United States of America the full and exclusive right in and to the said invention • • • for their free use thereof."

DESIGN PAT. 133,560. Design for a slip. Patented Aug 25, 1942.

DESIGN PAT. 136,616. Design for a slip. Patented Oct 19, 1943.

☆ U. S. GOVERNMENT PRINTING OFFICE O—1947